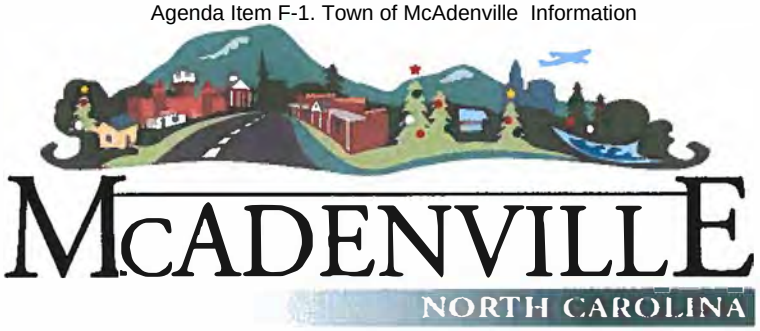

www.townofmcadenville.org

June 10, 2022

Christyn L. Fertenbaugh, P.E.
Project Manager- Viable Utility Unit
Division of Water Infrastructure/Department of Environmental Quality
512 N. Salisbury Street, 8th Floor
Raleigh NC 27604-1170
Christyn.fertenbaugh@ncdenr.gov

Re: Distressed Designation Request

Ms. Fertenbaugh,

The Town of McAdenville (Town) is seeking designation as a non-viable distressed unit based on financial, managerial, and technical challenges which affect the long-term sustainability of the water and sewer utility. Further details regarding each of these challenges can be found in Attachment (1). The summary in Attachment (1) is reflective of our presentation made to Department of Water Infrastructure and Local Government Commission staff (Attachment (7)) on 30 March 2002.

The Town has identified our current utility manager, Two Rivers Utilities (TRU/City of Gastonia), as a willing and able partner for a future consolidation and intends to conduct construction projects that have been identified as critical for the future systems consolidation but has need for state grant assistance to carry out the priority projects. Attachment (2) contains a joint letter documenting this commitment which was included in the Town's spring funding applications submitted to the Division of Water Infrastructure on May 2, 2022. Without funding assistance to complete these critical construction projects, the Town will not be in a position to merge with Two Rivers Utilities, yet the utility will not be sustainable on its own.

The Town has already completed substantial planning efforts financially supported by the Division of Water Infrastructure, including Asset Inventory and Assessments for both systems (Attachment (3)), and Merger and Regionalization Feasibility Studies for both systems (Attachment (4)), whose results support future system consolidation. Additional data to be considered under Criterion 4 to support the Town's case for designation, not included in the Division's assessment criteria, includes a 5-year rate projection (Attachment (4)). This data is a

result of the MRF studies and reflects exorbitant system rate increases that will be required over the next five years to support the systems, should the Town continue operating its utility as-is and not make any effort to move towards consolidation. As displayed in the document, the combined rates for water and sewer in 2026 will be $707.50 if nothing is done and the Town needs to independently supports its capital projects, maintenance, and operations.

The Town feels our current assessment score of 3 is not reflective of its long-term viability. The assessment criteria does not take into account the valuable data that has been collected through participating in DWI's Asset Inventory and Assessment and Merger and Regionalization programs. Through these prescribed planning efforts that the Town has conducted, the resulting data all indicate that the systems are not sustainable as-is based on the limited number of connections, the capital improvement needs, the limited managerial and technical capacity, and the financial constraints and rate increases required to support the systems.

If designated as distressed, the Town will complete the viable utility requirements in §159G-45(b) by:

1. Conducting an asset assessment and rate study. (completed in 2020)
2. Participate in a training and educational program. (Town applied for training funding within a construction application Spring 2022)
3. Develop a short-term and long-term action plan considering all of the following:
    a. Infrastructure repair, maintenance, and management.
    b. Continuing education of the governing board and system operating staff.
    c. Long-term financial management plan.

Attachment (5) contains a resolution codifying our commitment. We are hopeful this letter and supporting documentation demonstrate the Town's needs and commitment to adhering to the recommendations of the studies previously funded by DWI to regionalize our utilities into a viable and sustainable asset for our residents.

Sincerely,

Jim Robinette

Jim Robinette, Mayor
Town of McAdenville

Attachment – 1

Financial, Managerial, and Technical Challenges

Financial

The water system is aged and needs several million dollars in repairs over the next decade, which is a very challenging prospect given that it only serves 376 water and 295 sewer customers. The enterprise fund is operating efficiently enough to cover its current expenses, but at this current level of profitability it does not generate enough in reserves to tackle the current CIP projects and keep up with ongoing repairs. If an emergency repair or substantial failure occurred, the Town's enterprise fund reserves could be wiped out with little option to increase revenues and recuperate losses. The Town cannot charge enough for water and sewer service to continue the needed level of maintenance and improvements since the overall Town combined enterprise and general fund budget is only $1.7M. The Town would have to rely on grant funds to continue to finance its system since revenue alone cannot support it.

Currently, the combined rates for water and sewer service at 5,000 gallons usage is $90.88 which is above the state median of $79. In 2021 the Town worked with the Rural Water Association on a rate study (Attachment (5)) to be used during budget planning. Rural Water suggested a +3.5% increase on top of any Two Rivers Utilities (TRU) increase on wholesale rates. The Town adopted Rural Water's five-year plan and instituted a rate increase of 8.5%, in 2021 and will continue with an increase of +2%/year for the next 4 years. These planned increases will be in addition to any rate increases instituted by TRU.

To support the Town, TRU has not adjusted their contract operation rate since it started managing the system in 2012, but they cannot continue to cover this loss for much longer. TRU estimates that the current rates being charged for contract operations will need to increase by 50% to recoup their costs.

At this time, McAdenville has one outstanding loan which resulted from participation in the South Fork Sewer regional project. This project successfully decommissioned the Town's failing wastewater treatment plant. The outstanding debt makes up 25% of our water & sewer fund balance of $1.1 million.

The Town was able to build much of the current fund balance thorough collection of system development fees associated with the redevelopment of an aged residential area. Due to our small footprint, future development will be restricted to infill therefore limiting substantial increases in reserves. The Town is hesitant to commit more than 30% of existing fund balance to capital rehabilitation for fear of shortfalls in the event of a major system failure.

There are only 376 water customers and 295 sewer customers to carry the financial burden of the system's capital costs. There is no economy of scale, and this number of customers cannot support typical system rehabilitation. The Town will be reliant on grant funds to simply maintain functional water and sewer systems.

The attached AIA identified $6.5 million in capital needs over the next six year. This amount equates to $7.1 million in 2022 dollars.

Data developed through the attached MRF study demonstrates that long-term financial solvency is not attainable. The Town will remain financially challenged if it is unable to achieve a merger. Ultimately, the Town will need to significantly increase rates to an unattainable level to continue to support the system and complete the necessary improvements outlined in the CIP.

As is the case for all enterprise funds, the fund is expected to raise rates to pay for all expenses of the fund and dollars should accumulate as unrestricted net assets in preparation of funding major capital expenditures that are needed for the system to continue to operate safely.

The need to continue to achieve a positive net income, maintain a positive net position, and pay for capital improvements results in the Town needing a revenue increase of 40% for both water and sewer for the next four fiscal years, and an increase of 60% in 2027, the final year of the study. As the data demonstrates, the potential annual increase to customers equates to approximately $1800 per connection in fiscal year 2023 based on the cumulative increase in rates. The rate increases necessary to maintain the Town's water and sewer system are not viable. Residential customers cannot bear this financial burden.

Overall, maintaining the status quo does not move the Town of McAdenville toward a stronger, more viable water and sewer system. The burden of an extremely aged infrastructure coupled with ongoing operations and maintenance will continue with a small customer base who cannot shoulder the financial burden. A merger by the Town reduces the burden of operating and maintaining the systems by shifting the burden of system costs from a few citizens to a system that has an economy of scale.

McAdenville received an LGC unit letter in 2006 regarding negative cash flow of $41,000 in the water sewer fund, and the town had no cash on hand. In response, the Town increased water and sewer rates and instituted a fee schedule including typical items such as tap fee, and development fees. The Town continued our due diligence by doing yearly rate assessments and implementing rate increases as needed to maintain a positive financial position.

The Town also received an LGC unit letter on January 14, 2020. The letter indicated concern regarding its financial position since the general fund balance available as a percentage of expenditures fell from 134.84% in 2017 to 66.15% in fiscal year 2019. This percentage was no longer in balance with the statewide average for similar sized communities. This is an example of how even a relatively small capital project can put the Town in a financially precarious situation.

The Town has implemented significant rate adjustments since 2006. The addition of system development fees has resulted in most of the current fund balance. Due to the Town's small size, there are few additional opportunities for future development, other than infill development. Since the fund balance was primarily built through system development fees, this results in the Town having to significantly raise rates to maintain fund balance and complete capital projects.

Managerial

The Town faces significant challenges related to managing and operating its water distribution and wastewater collection networks.

The Town has only two full time employees who are responsible for all municipal services provided to the Town. The Town relies on TRU to perform proper system maintenance and to recommend necessary system repairs. The Town even contracts out water meter reading. All engineering or reporting must go through TRU. Town staff does not possess the technical skills, knowledge, or certifications to manage and operate a water and sewer system, so the Town is forced to use a contract operator. TRU has been

under contract with the Town for 10 years, and system reliability and compliance with DEQ regulations has improved vastly.

The current partnership with TRU has been invaluable to the town. We have built a trusting relationship with TRU over the last ten years and completely rely on their expertise and resources to maintain and operate our system. An overview and brief history of TRU's relationship and commitment to operating the Town's system is well demonstrated in Attachment (2).

Technical

Aside from financial and managerial constraints, the Town has been limited in its ability to execute Capital Improvement Projects due to lack of staff knowledge and expertise with large infrastructure projects, as well as a lack of time to devote to such projects with only two staff members. While the Town can handle street repairs, park maintenance, financial reporting, etc. the Town contracts out all police, fire, garbage collection and water/sewer needs.

The Town relies exclusively on TRU for infrastructure projects and engineering expertise. TRU has not been billing the Town for this time but certainly is entitled to do so and is expected to in the future.

In addition, the Town's infrastructure has limitations in terms of the level of system redundancy and areas with available fire service. The Town's two water systems are not interconnected and there are challenges with system pressures. One of the Capital Improvement Projects would address this by interconnecting the two water systems with appropriate pressure control.

Also, a large proportion of aged, industrial-era infrastructure is still present, particularly in the water distribution system. Customers routinely encounter pressure and volume challenges related to the water service. Some areas of Town routinely experience interruption in service due to repeated breaks of the same water lines.

Regarding fire service, low-income areas of Town are affected, and the Capital Improvement Plan includes work to improve fire service. The Town desires for all its customers to have access to water lines sized adequately and with adequate system pressure to provide fire service.

The Town is dependent on TRU to provide bulk water treatment and delivery service as well as wastewater treatment.

In summary, except for the conveyance of the piping in the ground, the systems are all but merged/consolidated with TRU from a technical aspect. TRU is not willing to accept the Town's existing infrastructure until critical projects identified in MRF and AIA are completed. Designation as a distressed unit will provide additional opportunities for grant funding for these projects. As indicated throughout these documents, self-funding of these projects is not financially viable or feasible.

Attachment – 2

Town of McAdenville/City of Gastonia Joint Partner Letter

April 22, 2022

Attn: NC DEQ Division of Water Infrastructure

In the absence of a formal Memorandum of Understanding due to the timing of the application deadline, the City of Gastonia (City) and Town of McAdenville (Town) offer this letter to document the historical, and on-going, collaboration and partnering efforts between the City and Town to establish conditions that will accommodate a desired future merger of the Town's water and sewer systems with those of the City.

Discussions between the City and Town around potential system mergers have been occurring since 2011, when the Town's Mayor and Administrator requested the City accept ownership of the water and sewer systems. As a result, the City proposed to begin contract operations in January 2012, charging a minimal fee, so that City staff could learn the Town's systems, identify system needs and create a Capital Improvement Plan to prepare for future system mergers. Prior to the City operating the systems, all work was reactive. There was no proactive maintenance and minimum NC standards were not being met.

In 2017, the City included an assessment of McAdenville's water distribution and sewer collection infrastructure in its AIA grants. The resulting CIP from this study defined deficiencies and has been a guiding document for a proposed consolidation/merger and basis for funding strategies for the parties to achieve the same. It has also identified the projects which must be completed before a merger can be realized to avoid the City's current customers paying for these necessary improvements, or excessive rate increases for the Town's existing customers.

In 2020, the Town received MRF grants for both systems to study the financial impacts of infrastructure needs and determine financing options. The City has been an active participant in these studies. In addition, the City has most recently participated in discussions between the Town, DWI and the LGC to explore and request consideration for McAdenville's systems to be deemed "non-viable" or "distressed" to support grant funding of the identified infrastructure needs. We believe financial support, in the form of grants, to support a future merger is consistent with SWIA's 2017 Infrastructure Master Plan.

Currently, the Town is a City bulk water and sewer customer. The City serves as both an operational and consultative extension of Town staff. Except for the conveyance of the Town's infrastructure to the City, under terms yet to be determined, the systems are all but consolidated. The merger will be conditional upon identified system rehabilitation being completed prior to a final agreement being executed.

We are hopeful that this letter demonstrates the valued and continued partnership and efforts between the City and the Town to achieve merger/regionalization.

Sincerely,

Lesley Dellinger, Town Administrator

Michael C. Peoples, City Manager

Attachment – 3

Asset Inventory and Assessment

MCADENVILLE ASSET MANAGEMENT PLAN

August 2020

Prepared for:

Prepared by:

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TABLE OF CONTENTS

1 Executive Summary

This Asset Management Plan (AMP) inventories and assesses the Town of McAdenville's water distribution and sewer collection systems. Assets within the Town's water distribution and sewer collection systems including water mains, valves, hydrants, gravity sewers, and manholes were inventoried in a Geographic Information System (GIS) database to be maintained by the City of Gastonia.

The database contains key performance indicators (KPI) such as age, material, dimensions, geographical locations, proximity to surface water, ease of access, customers served, and tax parcel information; these were used to determine the Likelihood of Failure (LoF) and Consequence of Failure (CoF) for the assets. The resulting LoF and CoF scores are on a 0 to 10 scale, with a score of 10 corresponding to the most likely to fail or having the most severe consequence(s) of failure. Once both of these scores were determined, each asset's Risk of Failure (RoF) was established within a 10 x 10 risk matrix with LoF and CoF on opposing axes. An asset's risk is determined by multiplying the LoF and CoF together. Scores can range from 0 to 100, with 100 having the highest RoF.

The KPIs for both LoF and CoF were determined by key members of the Town of McAdenville's staff and elected officials, and members of the City of Gastonia's public utilities (Two Rivers Utilities), finance, and engineering departments. These individuals were selected based on their in-depth knowledge of the Town's utility system as well as historical knowledge of the causes and impacts of previous system failures. The RoF scores are utilized to prioritize projects and place them within a funding timeframe within the next 50 years.

This AMP serves as a guide to the Town of McAdenville's inventory of water and sewer system assets, condition assessment of the assets, capital improvement plan (CIP) with cost estimates, and operation and maintenance (O&M) plan for the water and sewer systems. Approximate costs to replace sewer system assets, including gravity sewer lines, and manholes, and water system assets, including water mains, fire hydrants, and valves, were determined for 5- to 25-year planning periods from 2020 to 2070. Presented costs are in today's dollars.

This document is intended to be a living document which is reviewed and updated on a regular basis. It is recommended that the data stored within the GIS is continually captured and validated to ensure that the most relevant and accurate representations of the current systems are captured.

2 Introduction and Background

The Town of McAdenville is located in Gaston County, North Carolina approximately 6 miles east of the City of Gastonia. According to the North Carolina Office of State Budget and Management, the certified population estimate of McAdenville in July 2018 was 693, which is approximately 0.3% of Gaston County's total population of 221,006.

The Town owns a water distribution system and wastewater collection system, both of which are contract operated by Two Rivers Utilities. McAdenville previously maintained a wastewater treatment plant, the McAdenville WWTP, but the plant was decommissioned in July 2019, at which point McAdenville began sending their wastewater to the Long Creek WWTP, owned and operated by Two Rivers Utilities. McAdenville sends an average 34,000 gallons per day (GPD) to the wastewater plant. The Town obtains potable water from Two Rivers Utilities by way of a 1 MGD water purchase agreement that is valid until 2030. In 2019, McAdenville used an average of 0.271 MGD of this 1 MGD allocation. This large average daily demand is mainly due to the Pharr industrial account.

This Asset Management Plan (AMP) has been created in order to document, map, and assess the condition of the various assets in the Town's water and sewer systems, as well as prioritize, schedule and budget needed improvements. The goals of the AMP are to:

- Document the Town's water distribution and wastewater collection infrastructure
- Perform a non-intrusive condition assessment of the water and sewer system assets
- Apply cost estimates to identified needs
- Create a prioritized Capital Improvement Plan
- Document an Operation and Maintenance (O&M) Plan

The information provided in this report documents the location and condition data for the Town of McAdenville's current infrastructure. Maps and asset condition data for each system were updated in a GIS database by WithersRavenel and are provided with this AMP.

3 Sewer System Overview

Two Rivers Utilities has a Contract Operations Agreement with the Town of McAdenville to provide day-to-day operations and twenty-four-hour response to collection system emergencies. McAdenville has a wastewater collection system comprised of just over 200 manholes and approximately 7 miles of gravity sewer lines ranging in diameter from 4 inches to 18 inches. Pipe age ranges from new to over 75 years. The system does not include sewer lift stations. The McAdenville Pump Station, owned and operated by Two Rivers Utilities, pumps an average daily flow of 77,420 gallons per day (GPD) to the Long Creek WWTP, also owned and operated by Two Rivers Utilities. This pump station includes flow from the Town, as well as an industrial customer that is a direct sewer customer of Two Rivers Utilities.

7 Miles of 4”-18” Sanitary Sewer

200+ Sanitary Sewer Manholes

4 Critical Sewer Assets

4.1 Wastewater Treatment Plant

The Town of McAdenville sends its wastewater to the Long Creek WWTP, owned and maintained by Two Rivers Utilities. The Long Creek WWTP is discussed in further detail in the City of Gastonia Sewer System Asset Management Plan.

4.2 Lift Stations

The Town of McAdenville does not own or operate any lift stations.

4.3 Gravity Sewer, Force Main, and Manholes

4.3.1 Gravity Sewer and Force Main

The Town of McAdenville's collection system consists of approximately 7 miles of gravity sewer to convey wastewater from the collection system to the TRU-owned McAdenville Lift Station, which pumps to Long Creek WWTP. Pipe diameters range from 4 to 18 inches and pipe ages range from under 10 years to over 75 years. **Figures 1, 2** and **3** provide a summary of the sizes, materials, and ages of the gravity sewer pipes contained in Town's collection system.

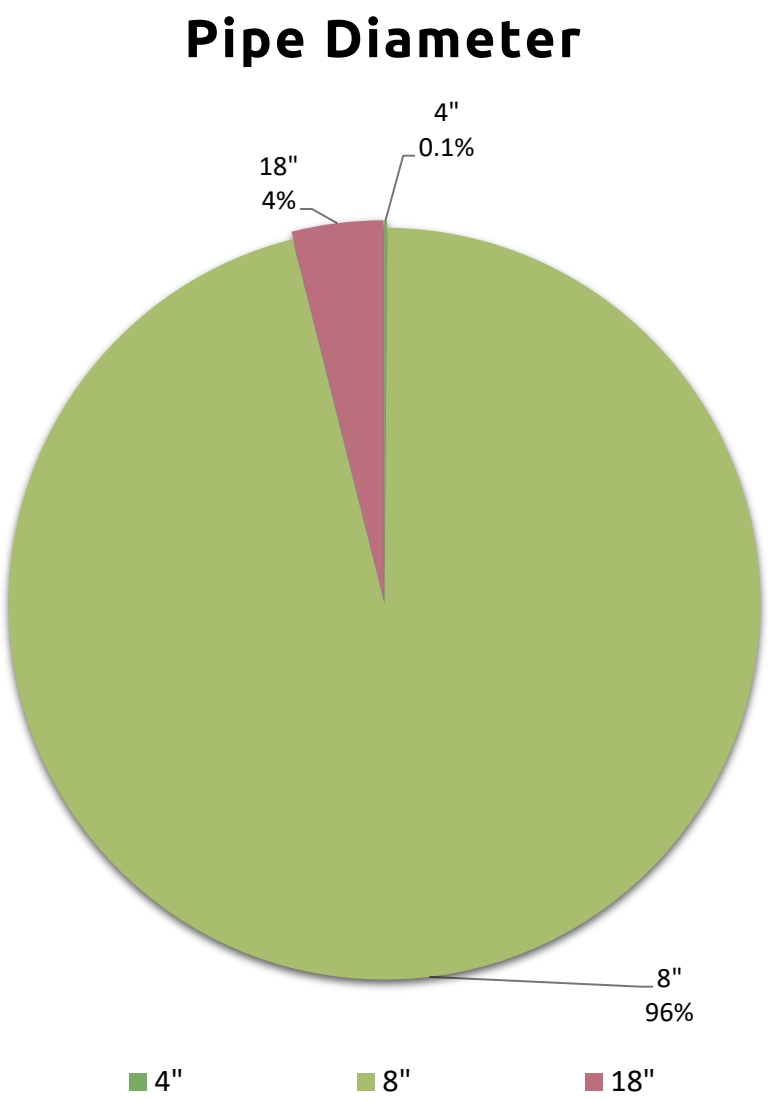


Figure 1. Diameters (inches) of gravity sewers in the collection system.

As shown in **Figure 1,** the vast majority of the gravity sewers are 8-inch diameter. This is typical as these sizes are prominent for branch collectors which feed into larger 18" trunk lines which make up approximately 4% of the system. The remainder of the system is comprised of 4" lines, making up less than 1% of the system.

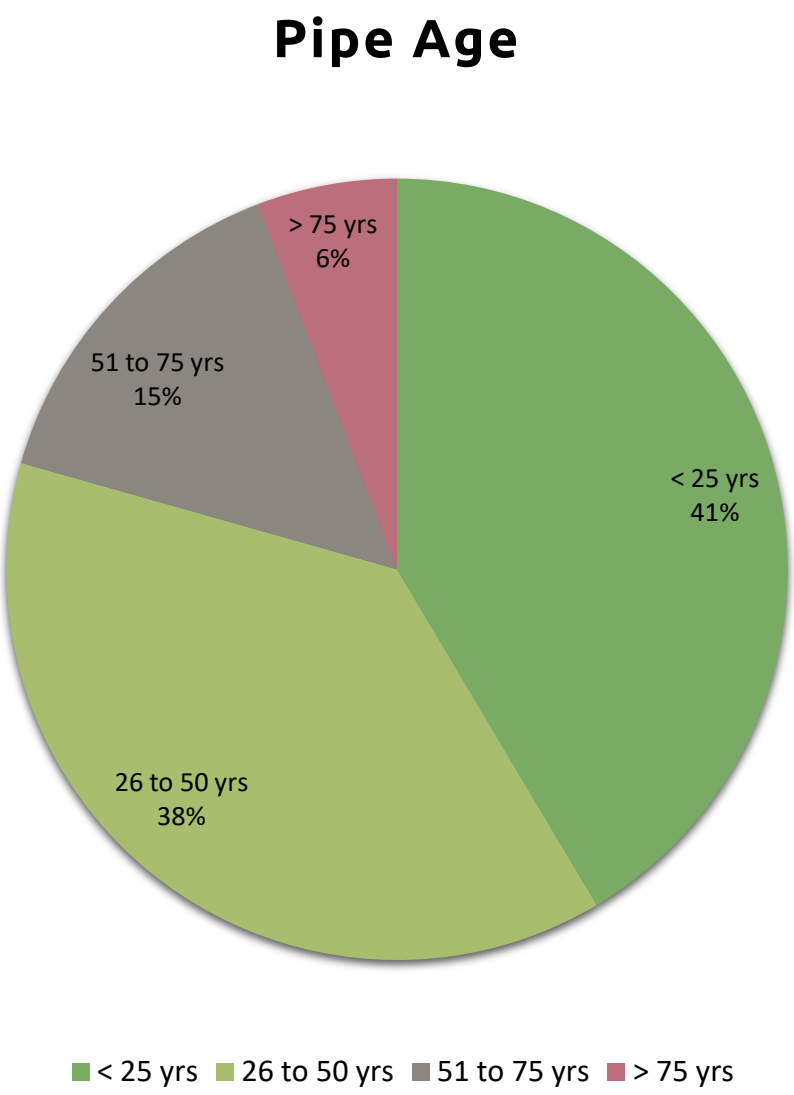


Figure 2. Ages (years) of gravity sewer pipes in the collection system.

Figure 2 illustrates the general age of the collection system pipes. 59% of the lines have been in place for over 25 years, but only 6% have been in place over 75 years. 41% have been installed within the last 25 years.

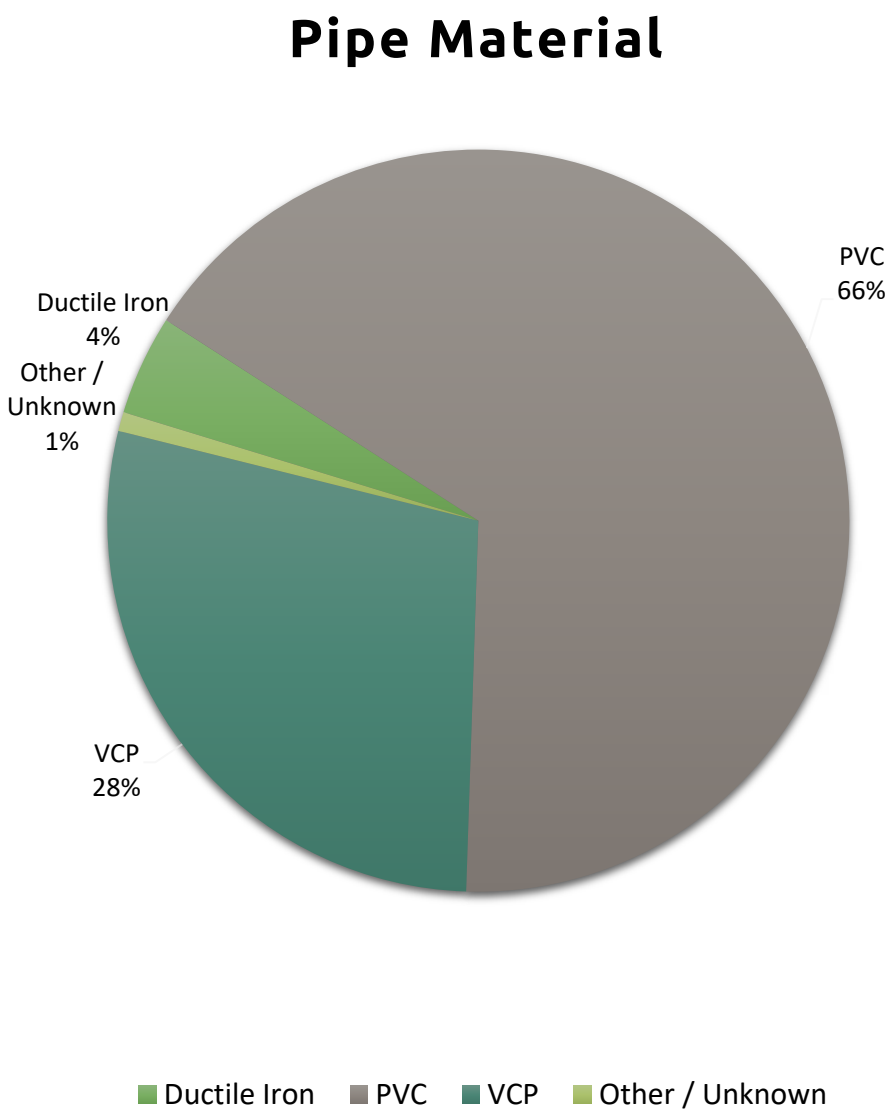


Figure 3. Materials of gravity sewer pipes in the collection system.

Figure 3 represents the various pipe materials found in the Town's collection system. 66% of the sewer system is comprised of polyvinyl chloride (PVC). Ductile iron pipe (DIP) represents approximately 4% of the system. Vitrified clay pipe (VCP) represents 28% of the sewer utility, and is typically the oldest and potentially most compromised piping.

4.3.2 Manholes

The Town's sewer collection system consists of just over 200 manholes. Currently, the only manhole data stored in the GIS database are the manhole identifier and the location. As a result, manholes were assigned the LoF and CoF KPIs of the connected gravity sewers, except in those places where the GIS could more accurately assign LoF and CoF scoring based on location and KPIs. Manholes are included in the sewer system repair cost estimates.

5 Sewer Asset Condition Assessment, Ranking, and Prioritization

Each gravity sewer line and manhole inventoried was prioritized for improvement/replacement. As discussed in Section 4, the manholes are populated with the same or similar scores as the adjoining sewer and are included as part of the sewer asset for the CIP improvement projects because it is common for sewer rehabilitation projects to replace or rehabilitate manholes when adjoining sewer lines are repaired.

Based on the asset KPIs stored in GIS, each asset was assigned LoF and CoF scores which were utilized to calculate the Risk Score for each asset. Lower risk scores indicate less risk, while higher scores indicate greater risk. Therefore, the risk score indicates the relative priority for the repair/replacement of the asset. Approximate costs were determined to replace gravity sewer lines and manholes for the next 50 years. The projected costs are not adjusted for future cost but are instead displayed as current dollar amounts for consistency.

5.1 Priority Ranking Methodology

Three KPIs were used to determine the LoFs of the gravity sewer lines and manholes in the Town's collection system. These KPIs are weighted based on their impact on LoF as described below and listed in **Table 1**:

- Age – Age is a typical indicator for LoF, as continued use and degradation over time leads to a higher likelihood of problems in older assets.
- Material – Materials that are known to be more likely to fail, such as vitrified clay pipe which is susceptible to cracking, are given higher scores.
- Capacity – Capacity is based on the cumulative number of customers (as determined by tax parcels upstream of the pipe). Pipes with a higher capacity have a higher likelihood of excessive flow or presence of foreign material that causes damage or SSOs.

Table 1. Sewer Likelihood of Failure (LoF) scores are based on the following KPI factors:

Pipe Age (Years)	LoF Score
>75	4
51-75	3
21-50	2
0-20	0.5

Pipe Material	LoF Score
Vitrified Clay	3
Ductile Iron	1
Unknown	1.5
Polyvinyl Chloride	1

Capacity (potential connections)	LoF Score
120 - 171	3
45 - 119	2
0 – 44	1

In addition, the CoF for the gravity sewer lines were calculated from four separate KPIs which are weighted based on the impact of the asset's failure. These KPIs are described below and allocated scores are listed in **Table 2**:

- Customers Affected – Assets whose failure impacts a greater number of customers were given higher scores.
- Traffic – Sewer repairs within a street require street closure and additional personnel for traffic control. Streets with higher speed limits were assumed to carry more traffic and therefore have a higher impact on the community.
- Cost of Adjacent Infrastructure – This value measures potential fiscal impact on properties adjacent to the infrastructure segments. Damage to higher value properties would produce more expensive repair costs should adjacent assets fail. Dollar values were calculated by adding all of the tax values of properties along a particular pipe segment.
- Environmental Consequences – Assets located close to surface waters were given higher scores due to the potential to adversely affect surface waters in the case of an asset failure.

Table 2. Sewer Consequence of Failure (CoF) scores are based on the following KPI factors:

Customers Affected	CoF Score
11 – 20	3
6 - 10	2
0 - 5	1

Traffic (Speed limits in MPH)	CoF Score
35 - 45	2
<35	1
N/A	0

Cost of Adjacent Infrastructure	CoF Score
> $2,142,832	2.5
$834,211 – $2,142,832	1.5
< $834,211	0.5

Environmental Consequences	CoF Score
0’ – 50’	2.5
51’ – 100’	2
101’ – 300’	1
> 300’	0

After the LoF and CoF scores were assigned to the gravity sewer lines and manholes, the scores were multiplied together to determine the overall risk score for each asset. The risk scores can range up to 100, with a lower score meaning the asset is a lower risk (and therefore a lower priority for repair/replacement) and a higher score indicating the asset is a higher risk (and therefore a higher priority for repair/replacement). **Figure 4** shows how LoF scores and CoF scores determine an asset’s overall RoF score, and color codes the RoF scores to show their recommended year of replacement. The following formulas determine an asset’s RoF:

Total LoF Score = (LoF score, Age) + (LoF score, Material) + (LoF score, Capacity)

Total CoF Score = (CoF score, Customers Affected) + (CoF score, Traffic) + (CoF score, Cost of Adjacent Infrastructure) + (CoF score, Environmental Consequences)

RoF Score = Total LoF Score * Total CoF Score

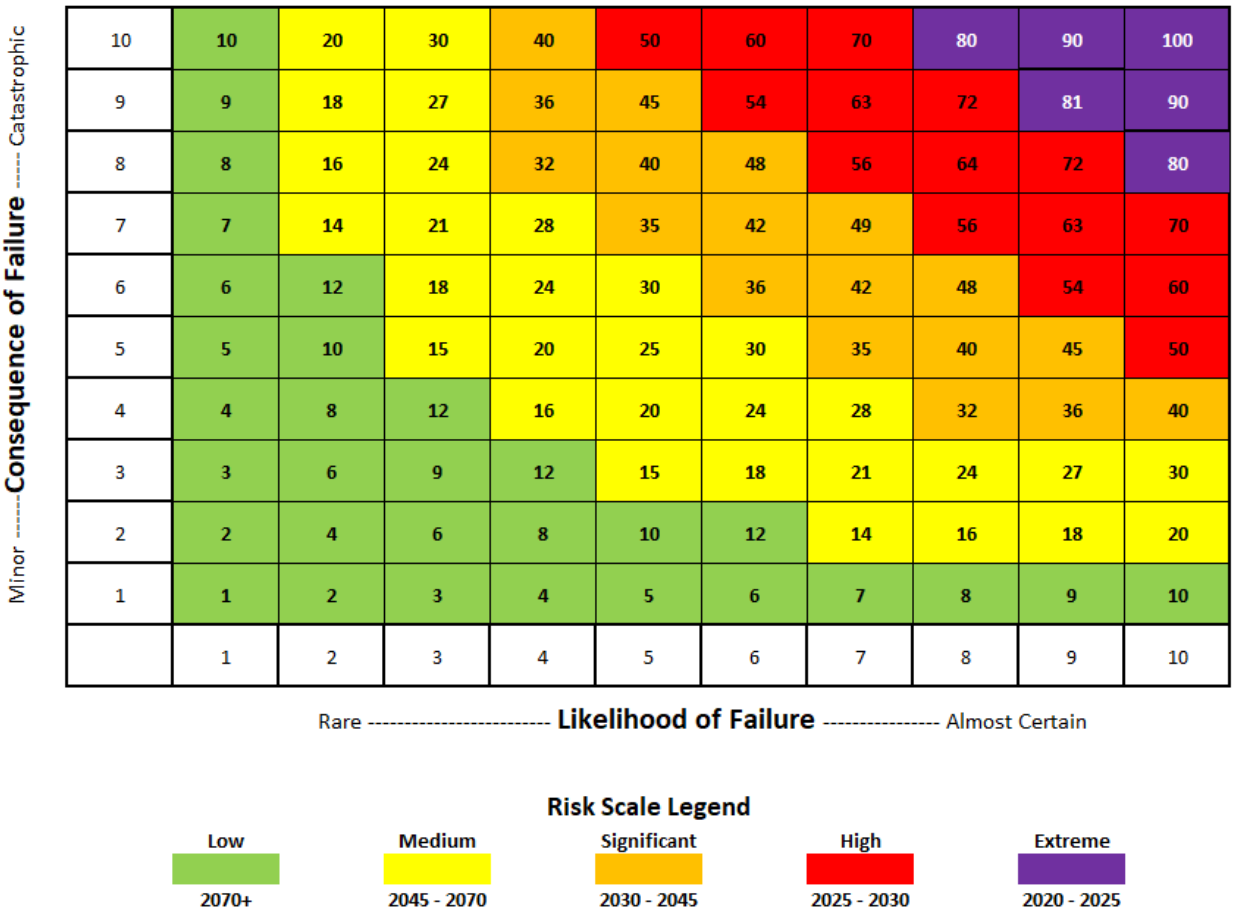
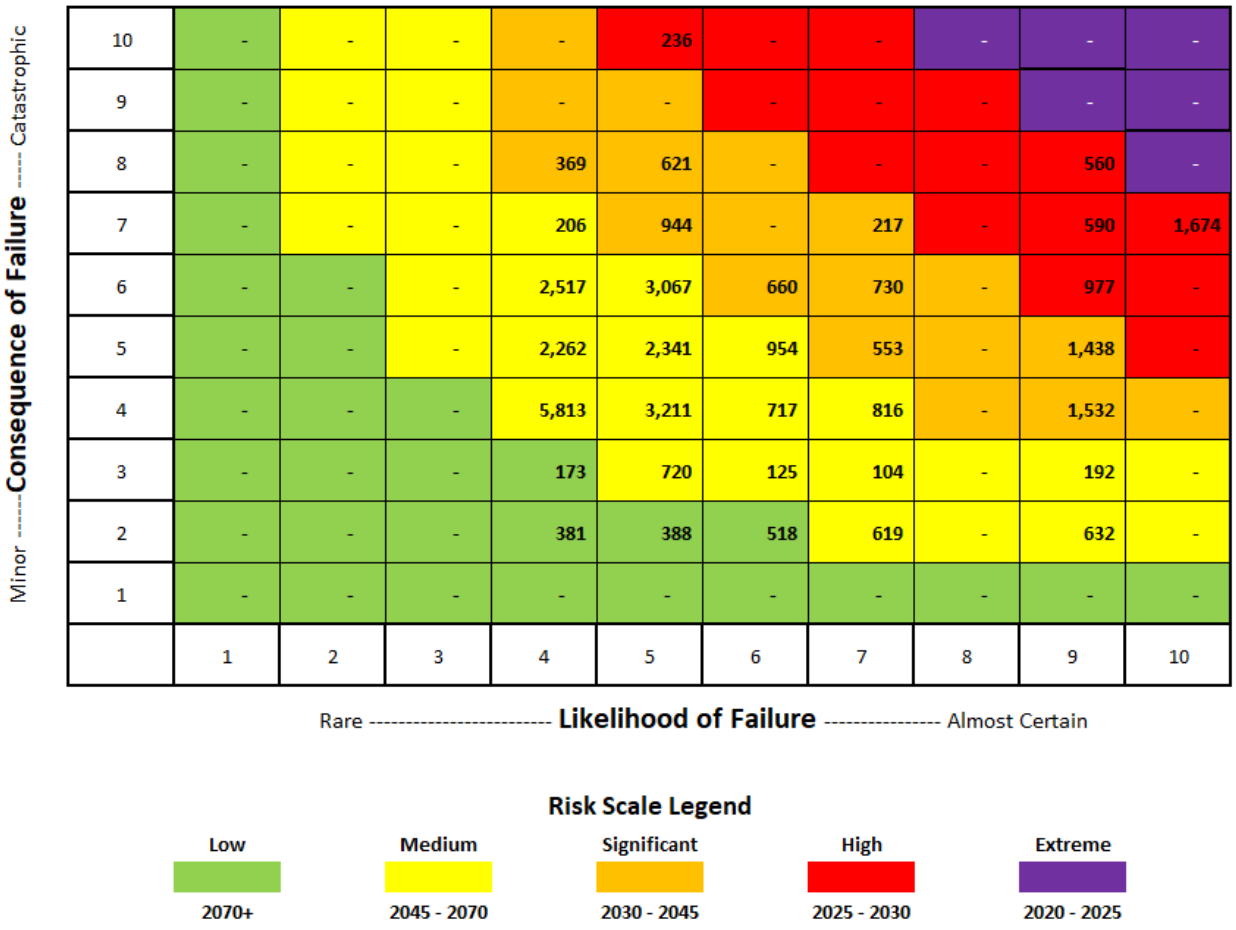


Figure 4. Typical risk matrix indicating possible risk scores and priority rankings for the sewer assets. Categories from "Low" to "Extreme" are based on an assumed time to failure. For example, the "Extreme" category is defined as anything scoring 80 or above and is assumed to require replacement by FY 2025.

5.2 Asset Prioritization Results

Using the ranking methodology described in **Section 5.1**, each of the gravity sewer pipes and manholes was assigned a risk score. As seen in **Figure 5** below, 4,037 LF of gravity sewer were placed in the "High Risk" category and 7,063 LF were placed in the "Significant Risk" category.



	1	2	3	4	5	6	7	8	9	10
10	-	-	-	-	236	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-
8	-	-	-	369	621	-	-	-	560	-
7	-	-	-	206	944	-	217	-	590	1,674
6	-	-	-	2,517	3,067	660	730	-	977	-
5	-	-	-	2,262	2,341	954	553	-	1,438	-
4	-	-	-	5,813	3,211	717	816	-	1,532	-
3	-	-	-	173	720	125	104	-	192	-
2	-	-	-	381	388	518	619	-	632	-
1	-	-	-	-	-	-	-	-	-	-

Figure 5. Risk Matrix illustrating the risk category for the gravity sewer pipes. The numbers in the matrix represent linear footage of pipe that received each risk score. The numbers in the legend represent the year range in which repair/replacement should be scheduled.

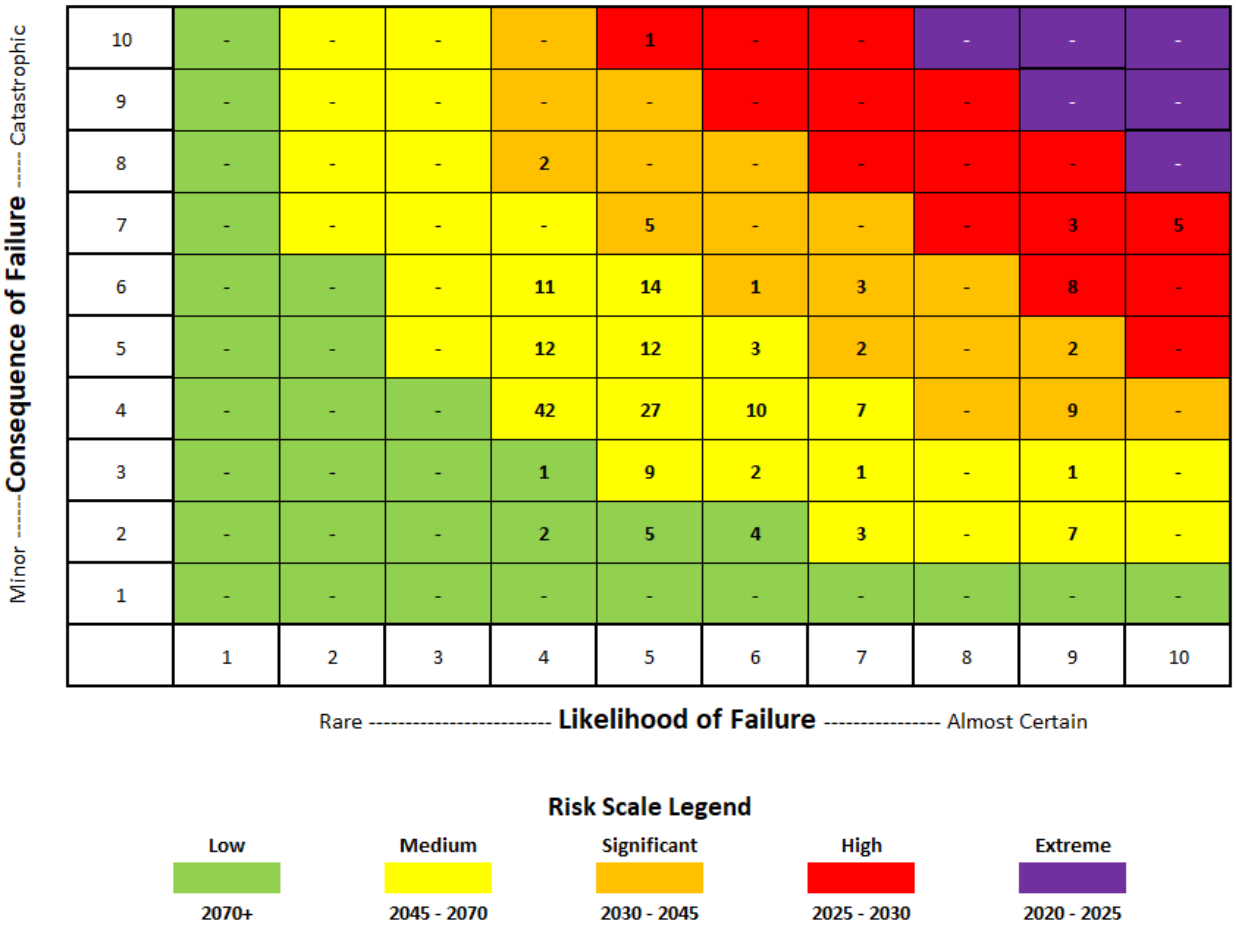


Figure 6. Risk Matrix illustrating the risk category for the sewer system manholes. The numbers in the risk matrix represent the number of manholes that received each score. The numbers in the legend represent the year range in which repair/replacement should be scheduled.

Assets categorized as High Risk should be evaluated for repair within the next 10 years. As seen in **Appendix I** the High Risk sewers are located along Poplar Street and in the northern part of the Town along Willow Drive.

6 Sewer System Capital Improvement Plan

6.1 Sewer System Improvements

With adequate data loaded into the GIS along with KPIs and their assigned scores, it is possible to automate a broad, generalized snapshot of prioritized replacement costs based on the results of the risk matrix.

To unitize gravity sewer replacement costs, each pipe segment is first converted to its inch-foot dimensions. As an example, 1,000 linear feet of 8-inch pipe is 8,000 inch-feet, whereas 1,000 linear feet of 12-inch pipe is 12,000 inch-feet.

Next, based on an evaluation of many construction bids across North Carolina, it was determined that the average cost for combined sewer pipe and manhole replacement is approximately $23/inch-foot. Similarly, trenchless rehabilitation, which causes less disruption to the surrounding community by limiting trenching activities, costs approximately $12/inch-foot, including manholes. These values include soft costs, such as engineering, permitting, and inspection.

Without extensive assessments and evaluation of the sewer, it is not possible to differentiate the assets that are candidates for replacement vs. trenchless rehabilitation. However, it is expected that a high percentage will qualify for less expensive and non-intrusive trenchless rehabilitation. For the purpose of this AMP, it is assumed that 85% of the system will qualify for the less expensive rehabilitation option.

Table 3 and **Figure 7** below detail the total cost of replacement/rehabilitation based on an 85% rehabilitation weighted estimate. Based on the weighted estimates, the Town of McAdenville would need to allot approximately $4.22M (today's dollars) to replace/rehabilitate the entire system. The total present-day value of the system is approximately $7.11M, based on the $23/inch-foot estimate.

Table 3. Total system replacement or rehabilitation cost by risk category.

Risk Score	Percent	Inch-Feet	$23/Inch-Foot	$12/Inch-Foot	$13.65 Weighted/Inch-Foot
LOW	4%	11,682	$0.27 M	$0.14 M	$0.16 M
MEDIUM	67%	207,586	$4.77 M	$2.49 M	$2.83 M
SIGNIFICANT	19%	57,609	$1.32 M	$0.69 M	$0.79 M
HIGH	10%	32,293	$0.74 M	$0.39 M	$0.44 M
EXTREME	0%	0	$0.00 M	$0.00 M	$0.00 M
TOTAL	**100%**	**309,170**	**$7.11 M**	**$3.71 M**	**$4.22 M**

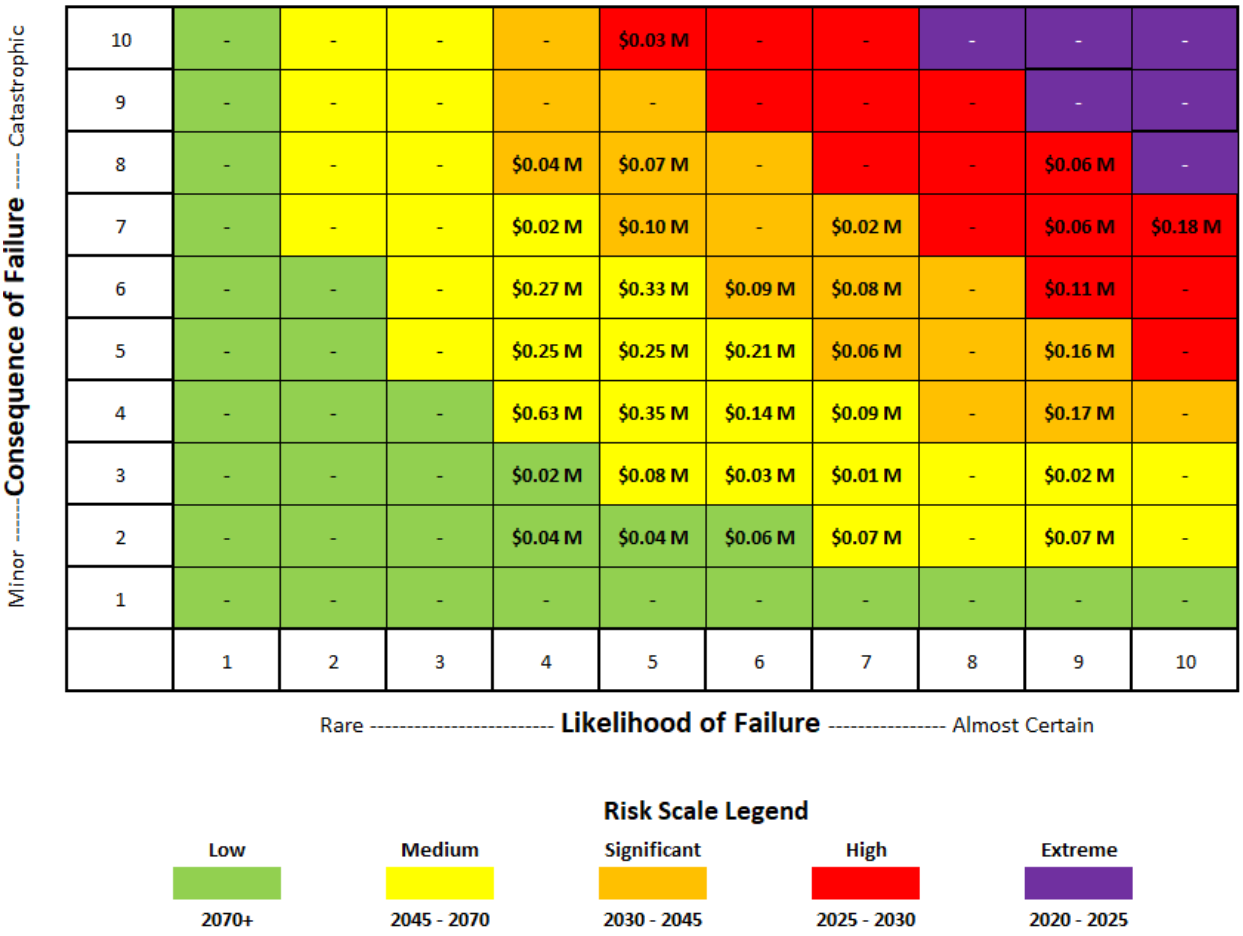


Figure 7. Summary of sewer replacement / rehabilitation with an 85% rehabilitation versus 15% replacement weighted cost opinion.

6.2 Gravity Sewer Improvements

Based on input from the Town of McAdenville, Two Rivers Utilities, and the Risk Matrix scoring, the following projects are recommended for inclusion in the CIP budget for the Town of McAdenville system over the next 25 years. The locations for these projects are shown in **Appendix III**.

1. **Pharr Line** - $594,000

The GIS identifies the pipes in this project as being High and Significant Risk. The High Risk pipes feed into Significant Risk pipes that currently run underneath a number of buildings. The pipes are over 50 years old and made of VCP, so they are likely degraded and allowing inflow/infiltration. They are also fairly close to a surface water, so replacing or rehabilitating them is a high priority to prevent contamination to environmentally sensitive areas. This project will involve replacing approximately 1,600 LF of 8-inch pipe with new 8-inch DIP sewer line, as well as replacing the associated manholes. It will also abandon approximately 1,300 LF of 8-inch

pipe and reroute that pipe so that it no longer runs underneath any buildings. One proposed alignment is shown in **Appendix III**, but this alignment requires further field evaluation to ensure the topography in the area is compatible with the proposed project.

2. **Poplar Street and Aviary Court** - $732,000

The GIS identifies the pipes in this project as being either high or significant risk. This is likely because most of the pipes are VCP older than 50 years, which is susceptible to cracking and allowing inflow/infiltration, and because they are high capacity lines. This project will replace approximately 3,350 LF of existing 8-inch sewer lines with new 8-inch DIP sewer lines and will also include replacing the associated manholes.

3. **Smoke and Dye Testing** - $10,000

There are currently 13 customer addresses in the McAdenville sewer system with unknown service connections. This project will use smoke and dye testing to determine how these customers are connected to the system.

7 Collection System Operation and Maintenance (O&M) Plan

Operation and Maintenance for the Town of McAdenville wastewater collection system focuses on meeting NCDEQ's collection system requirements. Maintenance consists of "Emergency Maintenance," which is corrective action needed quickly to keep the system operational, and "Preventative Maintenance," which is routine, scheduled tasks in order to prevent problems before they arise. The items below represent preventative maintenance items performed throughout the collection system.

7.1 Collection System Maintenance

- Clean and video inspect at least 10% of the collection system each year. At the time of cleaning, record the date, location of cleaning, type of cleaning, and other general observations during cleaning (type of debris, quantities, etc).
- Document all SSOs using the State form or other similar form. All spills, reportable or not, must be documented. Spills that are reported to the State should be on the required form.
- Information from new construction and rehabilitation projects, including line diameter, material, and scoring for other KPIs, must be incorporated into the collection system GIS within one year of construction completion.
- All high priority lines (including aerials, sub-waterway crossings, lines contacting surface waters, lines positioned parallel to stream banks and subject to eroding in such a manner that may threaten the line, and any other segment of the system that is designated as high priority) must be inspected every six months. A log must document the area inspected, the date, method of inspection, and any corrective actions performed or initiated.

8 Water System Overview

The Town of McAdenville owns two separate water distribution systems, the McAdenville system and the Crossroads system. Both systems have their own pressure reducing valve (PRV) and operate at different pressures. Interconnection of these systems is a priority to minimize sampling, testing, and reporting requirements. The systems consist of valves, hydrants, and a combined 10 miles of distribution pipelines. The Town does not have a water treatment plant and instead purchases water from Two Rivers Utilities. There is also an emergency water supply connection with the City of Lowell.

The distribution systems are composed of a variety of different pipe materials including asbestos cement (ACP), cast iron (CIP), ductile iron (DIP), galvanized steel (GSP), and polyvinyl chloride (PVC). Pipe ages range from under 10 years to over 75 years.

Appendix I includes maps showing the locations of water lines, valves, and hydrants in the Town's water system.

9 Critical Water Assets

9.1 Water Treatment Plant

The Town of McAdenville does not have a water treatment facility and instead purchases water from Two Rivers Utilities.

9.2 Water Mains

The Town of McAdenville's distribution systems include over 10 miles of water mains and appurtenances which distribute water to 378 customers (as of January 2020). Pipe diameters range from 1 to 12 inches and pipe ages range from new to over 75 years. The pie charts in **Figures 8**, **9**, and **10** provide a summary of the diameters, materials, and ages of the water mains in the distribution systems.

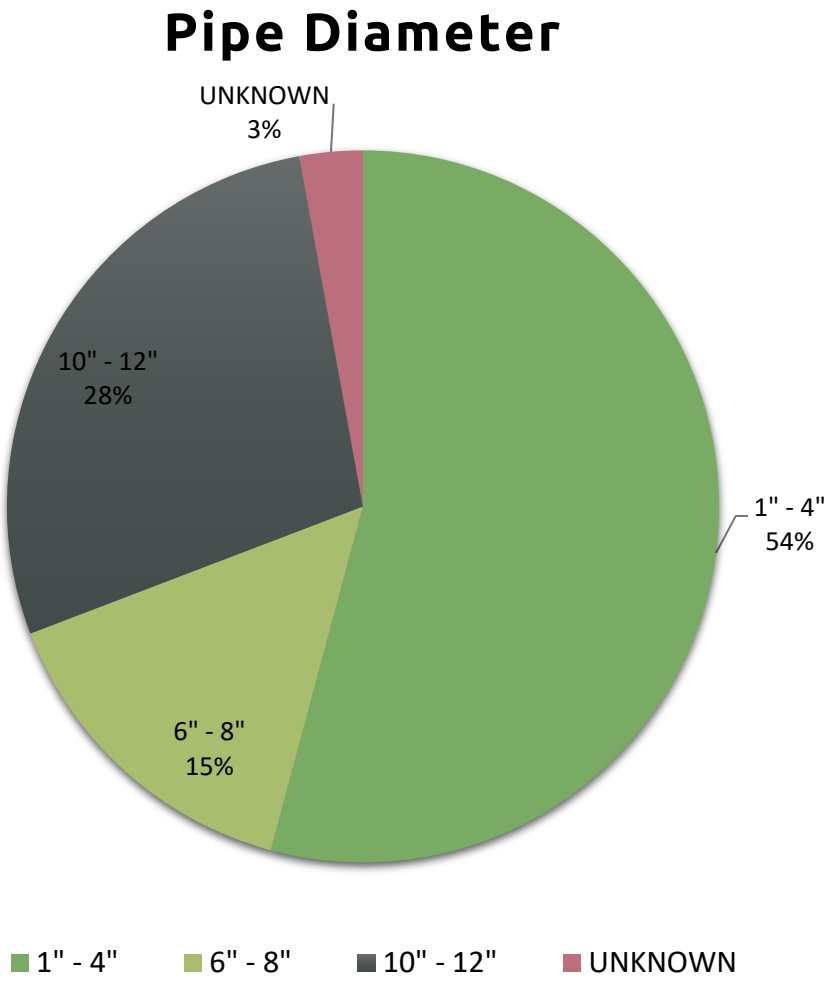


Figure 8. Diameters (inches) of water mains in the distribution system.

As shown in **Figure 8**, over half of the water mains are small diameter, 1-inch to 4-inch pipes. These pipe sizes are typical in small distribution systems but limit hydraulic capacity and fire protection. 15% of the water mains are 6-inch to 8-inch pipes, and 28% are 10-inch to 12-inch pipe.

Not shown or evaluated here are a considerable amount of private water mains belonging to Pharr Yarns. Efforts are underway to identify those mains and disconnect them from the public system.

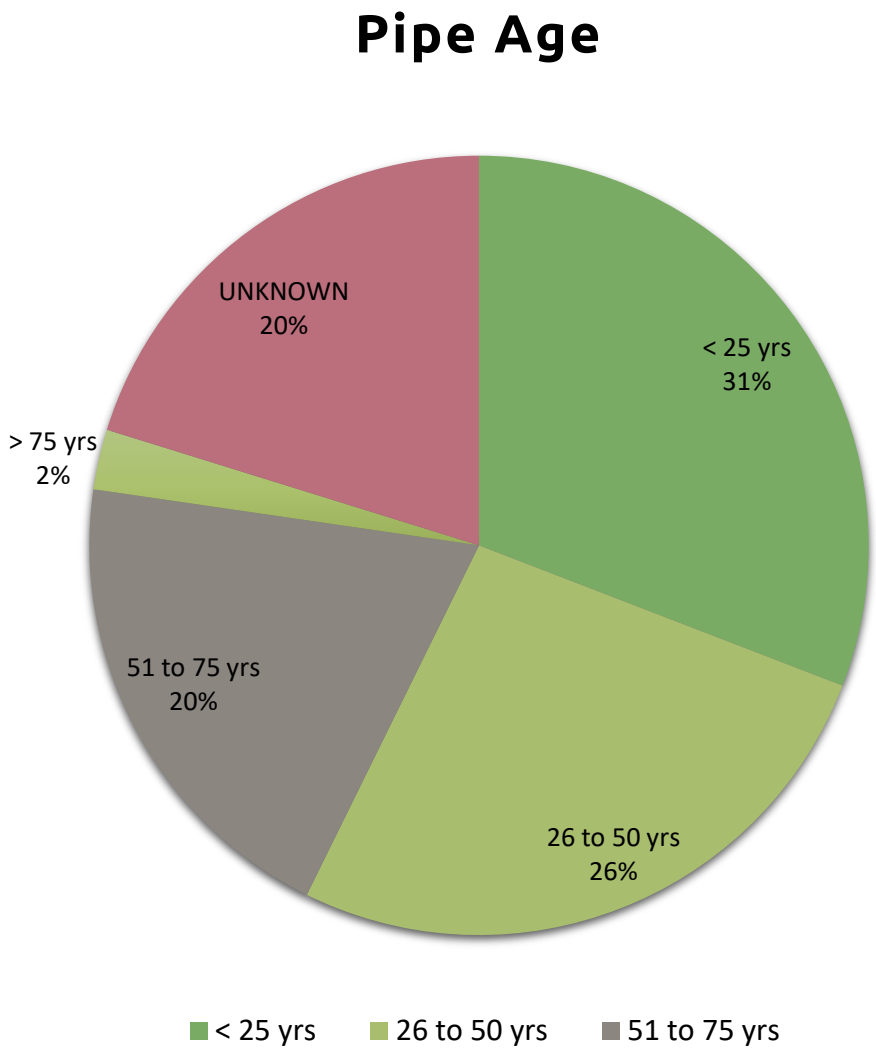


Figure 9. Ages (years) of water mains in the distribution system.

Figure 9 illustrates the general age of the distribution system pipes. Based on data provided, over half of the pipes are known to be under 50 years old. 20% of the system is between 51 and 75 years old, and just 2% of the system is known to be over 75 years old. The age of 20% of the system is unknown.

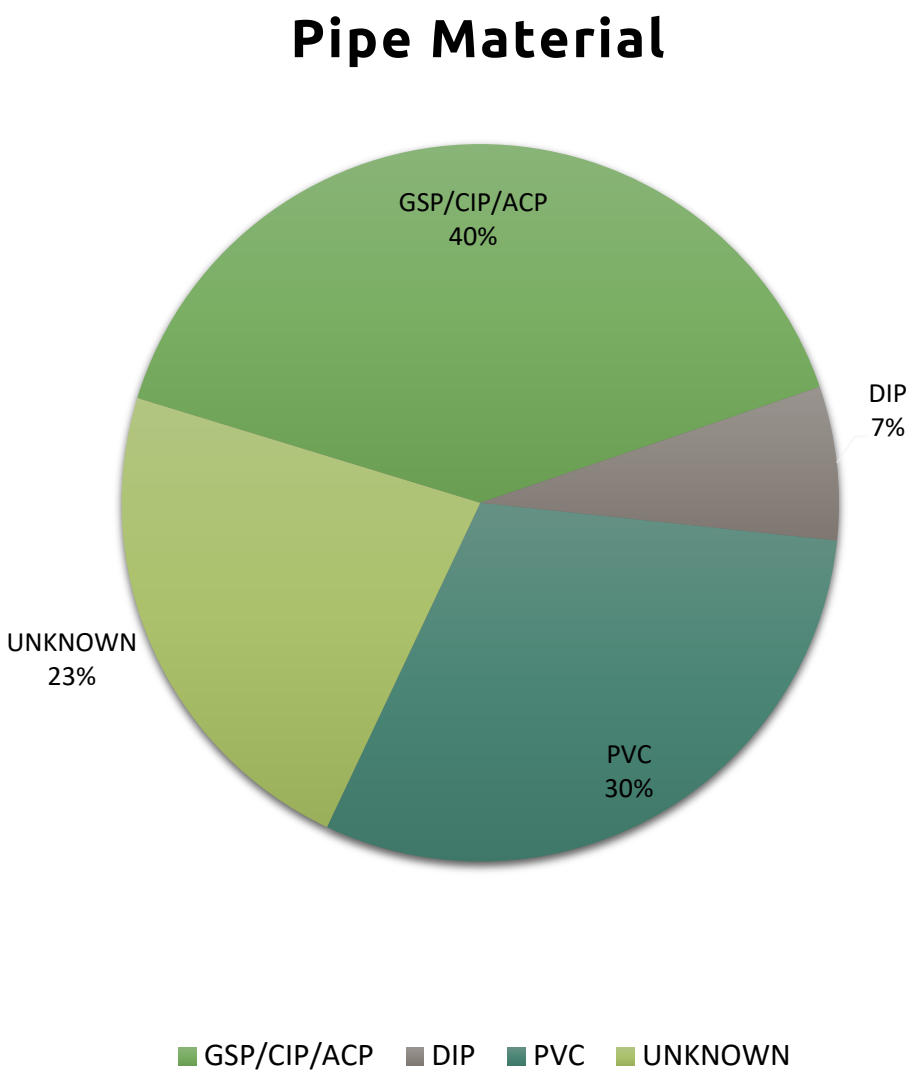


Figure 10. Material of water mains in the distribution system.

Figure 10 represents the various pipe materials found in the Town's distribution system. Based on the best available information from Town and Two Rivers Utilities staff, galvanized steel pipe/cast iron pipe/asbestos cement pipe represents 40% of the distribution system. These three pipe materials are no longer common in new installations due to problems related to headloss and water main breaks. PVC and DIP make up approximately 37% of the system and are commonly used materials in new installations. 23% of the system is comprised of unknown materials. As more system data is collected, the portion of the distribution system consisting of unknown material will decrease and improvements to this asset management plan can be made.

9.3 Elevated Storage Tanks

The Town of McAdenville's distribution system previously included two storage tanks, located on Saxony Drive and Main Street. However, both tanks have been disconnected from the system and are no longer in use. System head is provided by Two Rivers Utilities' elevated tanks.

10 Water Asset Condition Assessment, Ranking, and Prioritization

As with the sewer system, each of the water mains inventoried were prioritized for improvement or replacement using the methodology below.

10.1 Priority Ranking Methodology

Four KPIs were utilized to determine the LoFs of the water mains in the Town's distribution systems. These KPIs are weighted based on their impact on LoF as described below and listed in **Table 4**:

- **Age** – Age is a typical indicator for LoF, as continued use and normal wear and tear leads to a higher likelihood of problems in older assets.
- **Material** – Materials that are known to be more likely to fail, such as cast iron pipe which is susceptible to tuberculation, were given higher scores.
- **Pressure** – Pressure is inferred based on topography. Water mains closer to the river at elevations below 600' MSL carry higher pressure than water mains at higher elevations. Water mains subject to higher pressures receive higher LoF scores.
- **Undersized Pipe** – Water mains with diameters less than 6" were prioritized because these pipes cannot provide fire flow.

Table 4. Water Likelihood of Failure (LoF) scores are based on the following KPI factors:

Pipe Age (Years)	LoF Score
75+	3.5
51-75	3
25-50	2
<25	0.5
UNKNOWN	1.5

Pipe Material	LoF Score
GSP/CIP/ACP	3.5
DIP	1
PVC	1
UNKNOWN	1.5

Pressure	LoF Score
600’ - River	3
600’ – 650’	2
650’ – 700’	1
>700’	0

Undersized Pipe (<6”)	LoF Score
Yes	1
No	0

In addition, the CoF for the water lines were calculated from five separate KPIs which are weighted based on the impact of the asset’s failure. These KPIs are described below and allocated scores are listed in **Table 5**:

- **Customers Affected** – Assets whose failure impacts a greater number of customers were given higher scores.
- **Traffic** – Water repairs within a street require street closure and additional personnel for traffic control. Streets with higher speed limits were assumed to carry more traffic and therefore have a higher impact on the community.
- **Cost of Adjacent Infrastructure** – This value measures potential fiscal impact on properties adjacent to the infrastructure segments. Damage to higher value properties would produce more expensive repair costs should adjacent assets fail. Dollar values were calculated by adding all of the tax values of properties along a particular pipe segment.
- **Public Safety/Fire**– Water mains within a 500’ buffer of schools were given a higher score.
- **Bulk User** – Lines that serve a bulk user, specifically Pharr Yarns, were given a higher score.

Table 5. Water Consequence of Failure (CoF) scores are based on the following KPI factors:

Customers Affected	CoF Score
>60	3
21- 60	2
0 - 20	1

Traffic (Speed Limits in MPH)	CoF Score
35 – 45	2
<35	1
N/A	0

Cost of Adjacent Infrastructure	CoF Score
>$4,542,990	2
$2,375,475 - $4,542,990	1.5
< $2,375,475	1

Public Safety/Fire	CoF Score
YES	1.5
NO	0

Bulk User	CoF Score
YES	1.5
NO	0

After the LoF and CoF scores were assigned to the water mains, RoF scores were calculated as explained in **Section 5.1**. To determine a water asset's risk score, you would use the following formulas:

Total LoF Score = (LoF score, Age) + (LoF score, Material) + (LoF score, Pressure) + (LoF, Undersized Pipe)

Total CoF Score = (CoF score, Customers Affected) + (CoF score, Traffic) + (CoF score,Cost of Adjacent Infrastructure) + (CoF score, Public Safety/Fire) + (CoF score, Bulk User)

RoF Score = Total LoF Score * Total CoF Score

10.2 Asset Prioritization Results

Using the ranking methodology described in **Section 10.1**, each of the water mains was assigned a risk score. As seen in **Figure 11** below, 9,108 LF were placed in the "High Risk" category and 15,570 LF were placed in the "Significant Risk" category. Assets categorized as High Risk should be evaluated for repair within the next 5 to 10 years and those categorized as Significant Risk should be evaluated for repair within the next 10 to 25 years. This means approximately 16% of the water system should be evaluated for repair within the next 10 years.

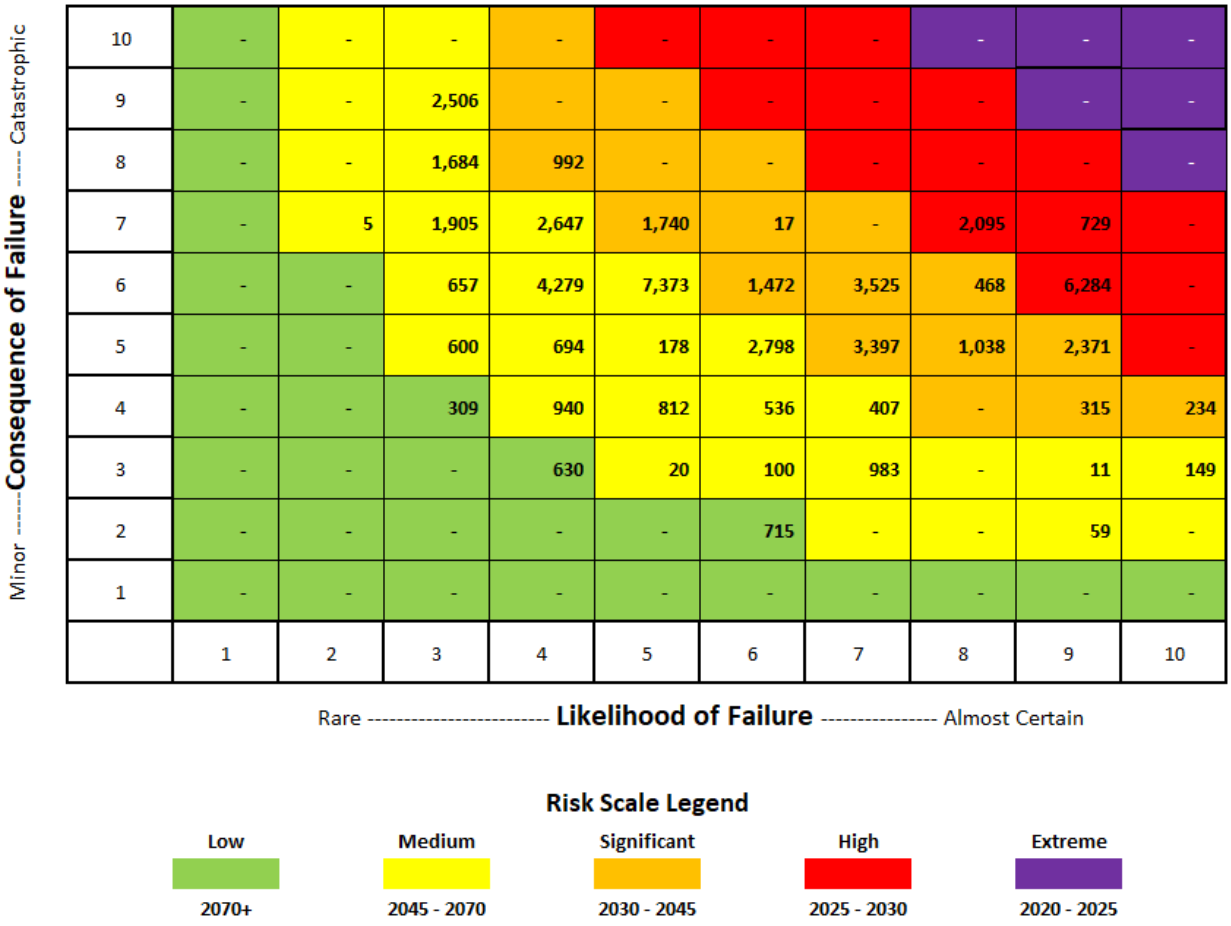


Figure 11. Risk Matrix illustrating the risk category for the water mains. The numbers in the matrix represent linear footage of pipe that received each risk score. The numbers in the legend represent the year range in which repair/replacement should be scheduled.

11 Water System Capital Improvement Plan

11.1 Water System Improvements

Based on an evaluation of many construction bids across North Carolina, it was determined that the average cost for combined water main, valve, and hydrant replacement is approximately $23/inch-foot. This value includes soft costs, such as engineering, permitting, and inspection.

Table 6 and **Figure 12** below detail the approximate total cost of replacement. The Town of McAdenville would need to allot approximately $7.16M (today's dollars) to replace the entire system, based on the $23/inch-foot estimate.

Table 6. Total system replacement cost by risk category. Water mains of unknown size were assumed to have a 6-inch diameter for the purpose of these estimates.

Risk Score	Percent	Inch-Feet	$23/Inch-Foot
LOW	1%	4,272	$0.10 M
MEDIUM	55%	172,061	$3.96 M
SIGNIFICANT	36%	111,703	$2.57 M
HIGH	7%	23,181	$0.53 M
EXTREME	0%	0	$0.00 M
TOTAL	**100%**	**311,218**	**$7.16 M**

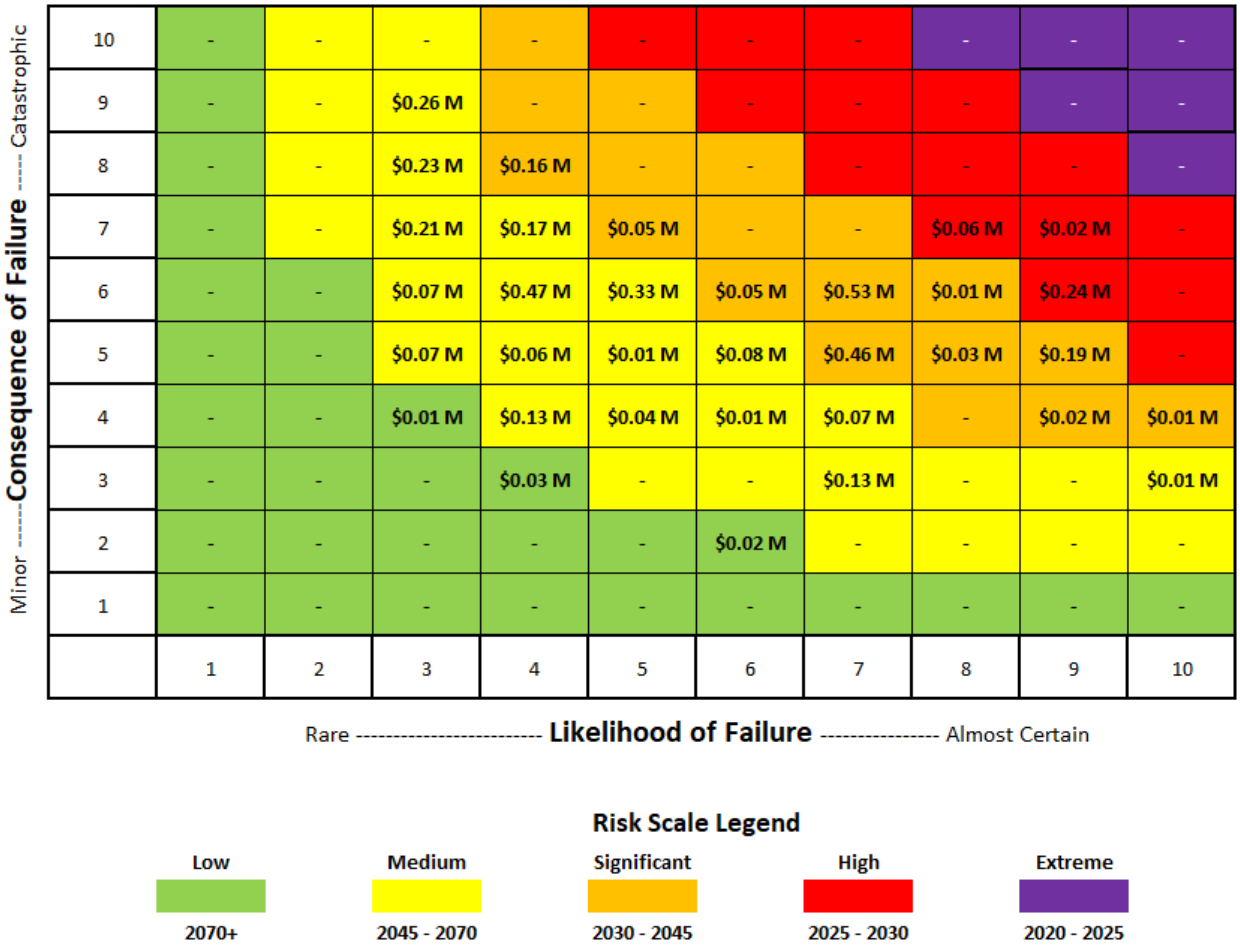


Figure 12. Summary of water replacement costs.

11.2 Water Mains

Based on input from Town of McAdenville and Two Rivers Utilities staff and the Risk Matrix scoring, the following projects are recommended for inclusion in the CIP budget for the Town of McAdenville system over the next 25 years. The locations for these projects are shown in **Appendix III**.

1. **Correct Cross-Connections on Saxony Drive and Willow Drive** - $1,121,470

This project will identify and correct cross-connections with industrial customers on Saxony Drive and Willow Drive.

2. **Town of McAdenville Pressure Reducing Valve** - $87,000

This project will replace the aging pressure reducing valve for the McAdenville system. The valve must be completely replaced because repair parts are not available.

3. **Ford Drive and Oak Drive** - $440,000

This project involves upsizing approximately 2,000 LF of existing 2-inch GSP water main with a history of breaks. These water mains are considered High Risk, mainly due to their material and age (over 50 years). The lines will be replaced with 6-inch DIP.

4. **Main Street** - $373,000

This project will abandon approximately 800 LF of 4-inch water main that currently runs under the old Space Dye Building and approximately 800 LF of 2-inch water line along Main Street. These water mains are considered Significant Risk, mainly due to their material (GSP) and age (over 50 years). The water mains will be rerouted using approximately 2,300 LF of 12-inch DIP lines.

5. **Wesleyan Drive Interconnection** - $625,000

Currently, the McAdenville water distribution system is two separately metered systems. This project will connect the two systems using approximately 1,500 LF of 10-inch water main to provide redundancy and provide enough water volume to provide fire protection on Riverside Drive.

6. **Poplar Street and Aviary Court** - $450,000

This project will replace approximately 2,500 LF of existing 2-inch water main of unknown material with new 6-inch water main. The existing lines have a history of water main breaks. The lines are classified as Significant Risk and Medium Risk, and several factors, including age and material, are unknown for some of the pipes in the project area.

7. **Pine Street and Fir Street** - $177,000

This project will abandon the 2-inch water lines on Pine Street, Fir Street, and McAdenville Avenue. The lines are classified as Significant Risk, mainly due to their material (GSP) and the fact that they are under 6-inch in diameter and therefore unable to provide fire protection. Approximately 1,500 LF of 6-inch water line will be installed to replace these lines and create a loop between Pine Street and Fir Street to improve service and water quality.

8. **Mockingbird Lane** - $100,000

This project will connect approximately 19 customers onto the 12-inch line on Mockingbird Lane and abandon the existing 2-inch line.

9. **Hickory Grove Road** - $42,000

This project will connect approximately 8 customers onto the 12-inch line on Hickory Grove Road and abandon the existing 2-inch line.

10. **Riverside Drive and Rankin Road** - $1,200,000

This project involves upsizing the existing 3-inch water main on Rankin Road installing new water line to create a loop between Rankin Road and Riverside drive to improve water quality. This project will involve installing approximately 5,500 LF of 8-inch water main.

12 Distribution System Operation and Maintenance (O&M) Plan

12.1 Distribution System Maintenance

- Calibrate bulk water meters annually.
- Reconcile water production records against water sales records regularly. Keep track of non-revenue water. Manage water system accordingly to find and eliminate leaks and under-recording meters.
- Investigate suspicious wet areas to determine if they are from leaking water mains. Make repairs as pertinent.
- Maintain a water line break evaluation log, which shows at a minimum the date, location of break, size, material and condition of waterline, description (cause, estimated quantity of water lost, etc.) and summary of repair. Maintain and update system data in the GIS.
- Exercise each valve/hydrant in the system at least once per year. Maintain a log which shows at a minimum the date, operator initials, location of valve/hydrant, and general valve/hydrant condition. Each hydrant and valve should be GPS located.
- Incorporate information from new construction and rehabilitation projects, including line diameter, material, valve or blow-off, installation year, and scoring for other KPIs, into the distribution system GIS within one year of construction completion.
- Maintain a written log with the date, location, and description of all water quality complaints. Document method used to respond to complaint.

13 Total CIP Estimates

The sewer repairs/rehabilitation combined with the water CIP projects results in the total CIP budget for the Town of McAdenville for the next 10 years, as seen in **Table 7.**

Table 7. Detailed list of projects proposed for the first 10 years.

Project Name	2020	2021	2022	2023	2024	2025-2030
Sewer Collection						
Pharr Line - Northern Section		$310,730.00				
Pharr Line - Southern Section			$283,270.00			
Poplar Street and Aviary Court						$732,000.00
Smoke and Dye Testing	$10,000.00					
Water Distribution						
Correct Cross-Connection at I-85 Plant	$375,740.00					
Correct Cross-Connection at Complex 9/23 Plant		$329,740.00				
Correct Cross-Connection at Complex 46 Plant			$415,990.00			
Town of McAdenville Pressure Reducing Valve	$87,000.00					
Ford Drive and Oak Drive				$440,000.00		
Main Street						$373,000.00
Wesleyan Drive Interconnection						$625,000.00
Poplar Street and Aviary Court					$450,000.00	
Pine Street and Fir Street						$177,000.00
Mockingbird Lane						$100,000.00
Hickory Grove Road						$42,000.00
Riverside Drive and Rankin Road						$1,200,000.00
CIP TOTAL	$472,740.00	$640,470.00	$699,260.00	$440,000.00	$450,000.00	$3,249,000.00

As seen in **Table 7**, the initial years of the CIP focus on essential projects that provide immediate impact in areas where water or sewer has aged beyond its useful life and are rated as a High Risk of Failure or in areas where staff have identified important shortcomings of the system.

Attachment – 4

Merger, Regionalization, and Feasibility Study and Rate Increases

Water & Wastewater Merger & Regionalization Feasibility Study

Town of McAdenville

April 12, 2022

WithersRavenel
Our People. Your Success.

115 MacKenan Drive
Cary, NC 27511

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Introduction

This project focuses on the Town of McAdenville (Town) and City of Gastonia/Two Rivers Utilities (TRU) in Gaston County. This project is linked to a 2017 Asset Inventory Assessment Grant (AIA) awarded to Gastonia/Two Rivers Utilities that included an assessment of McAdenville's water distribution infrastructure along with the wastewater collection system and focused on regionalization of water and wastewater services with McAdenville. The project purpose for McAdenville's portion of the AIA was to determine the condition of the existing system and the anticipated long-term needs for rehabilitation and replacement. There is already a successful system merger with the Town of Cramerton that facilitated the creation of TRU that can stand as an example of what is possible to achieve with the Town of McAdenville. This project is the culmination of many years of work between the partners and the main purpose is to study the financial side of this situation given the infrastructure needs in order to understand the financial options for McAdenville to officially merge its system with TRU.

In conducting this study, WithersRavenel examined the past and present rates, reviewed previously prepared studies and usage projections, and calculated the financial impact that projected changes would have on the fund and its users. The following objectives were identified for the study:

- Review the current financial data and budget, operation and maintenance procedures, and system and required capital improvement projects to determine potential alternatives for merging or regionalizing McAdenville and Two Rivers Utilities.

- Evaluate the proposed project alternatives in terms of rate impact, cash flow, and the level of service for the customer-base.

The Town of McAdenville participated as a partner in the 2017 Gastonia/TRU AIA North Carolina Division of Water Infrastructure project effort which resulted in the creation of an Asset Management Plan (AMP) for the Town to identify specific projects in its water distribution system and wastewater collection system that would have to be completed prior to TRU moving forward with a system consolidation. The AMP was completed in August 2020 and includes a 10-year CIP that identifies these projects and costs. This MRF will focus solely on McAdenville's financial position and a plan for how to get the projects carried out that need to be completed for a system consolidation to occur.

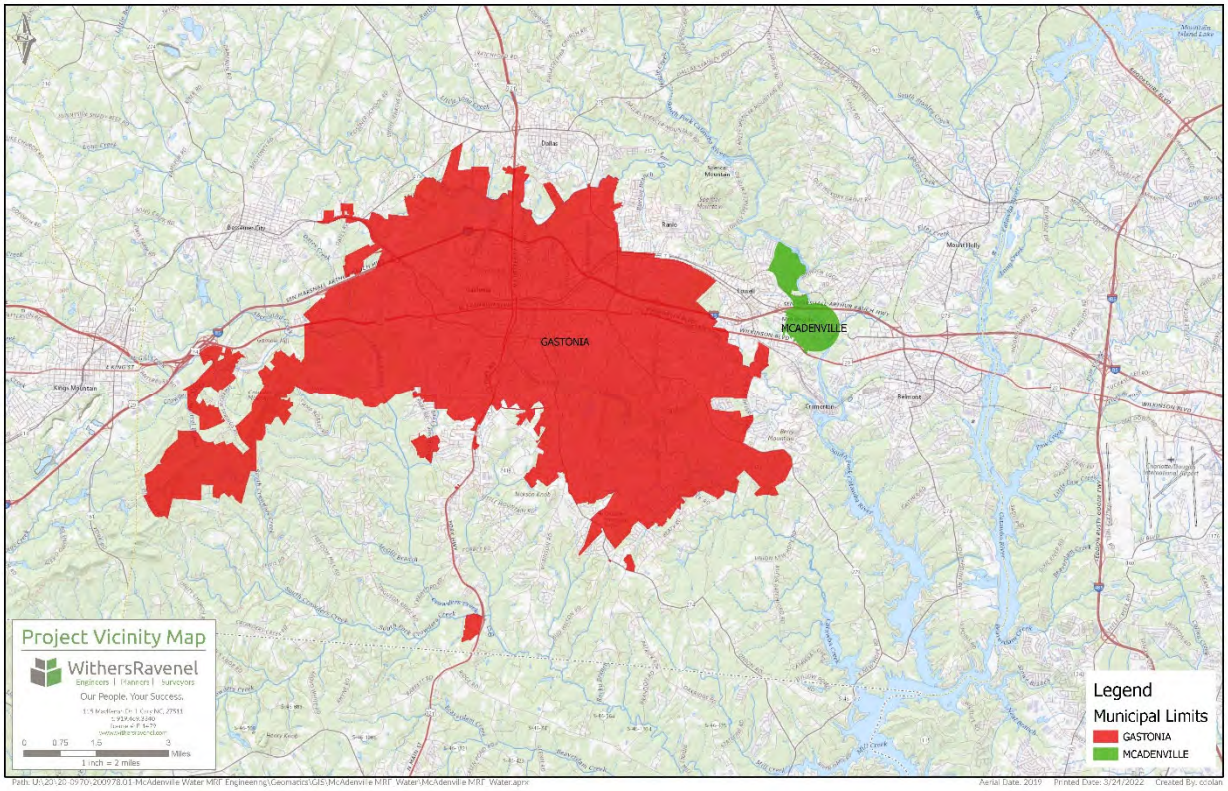
Today, the outdated wastewater collection system is largely a legacy related to the bygone era of manufacturing in the region. The Town of McAdenville would like to further explore the opportunity to consolidate its sewer collection system in order to provide safe and reliable sewer service at the lowest cost to its customers.

Certain assumptions have been made with respect to conditions that may occur in the future. While these assumptions are reasonable for the purposes of this study, they are dependent upon

future events and actual conditions may differ from those assumed. In addition, information has been used and relied upon which has been provided by others. This information includes, among other things, audited financial statements, annual operating budgets, and capital improvement projects plans. While this information is deemed reliable, the information has not been independently verified and no assurances are offered with respect thereto. To the extent that actual future conditions differ from those assumed herein or provided by others, the actual results may differ from those anticipated.

This analysis addresses each system's infrastructure, revenue requirements, future capital needs, debt service requirements and packages, and presents a financial analysis, findings, and outcomes of each alternative.

Overview



Town of McAdenville

The Town of McAdenville is a town of 890 located in Gaston County. The Town's water distribution system and wastewater collection system are both currently contract operated by Two Rivers Utilities. The Town obtains potable water from Two Rivers Utilities by way of a 1 million gallons per day (MGD) water purchase agreement that is valid until 2030. In 2019,

McAdenville used an average of 0.271 MGD of this 1 MGD allocation. This average daily demand is driven mainly by the Pharr industrial account.

The Town of McAdenville owns two separate water distribution systems, the McAdenville system and the Crossroads system. Both systems have their own pressure reducing valve (PRV) and operate at different pressures. There are significant backpressure issues related to operating old industrial lines with substandard components and sizing.

The Town faces technical, organizational, and financial challenges. The water system is aged and is in need of several millions dollars for repairs over the next decade, which is a very challenging prospect given that it only serves 370 water customers. The outdated water system is largely a legacy related to the bygone era of manufacturing in the region. The enterprise fund is sufficient enough to cover its current expenses, but with the current level of profitability there is not enough in reserve to do the needed upkeep of the system nor what is needed for ongoing repairs and improvements. The system does not generate enough funds to keep it moving forward indefinitely. If there were an emergency repair or other failure, the Town's enterprise fund reserves could be wiped out with little option to increase revenues to recoup the losses. The Town cannot charge enough for water service to continue the needed level of maintenance and improvements since the overall town combined enterprise and general fund budget is only $1.7M, split equally.

As the Town is a water purchaser from the City of Gastonia and does not own a water treatment plant, the Town does not have control over the rates that are charged to its customers and is at the mercy of its provider to maintain a fair and affordable cost structure. Even the water meter reader is contracted out by the Town to collect usage data every month, and any engineering or reporting need must go through the contracted manager since there are no in-house resources. There is an emergency interconnect with City of Lowell to purchase water.

As it currently stands, since the Town purchases wastewater processing and no longer owns any treatment plants, the Town does not have control over the rates that are charged to its customers and is at the mercy of its provider to maintain a fair and affordable cost structure. The sewer system has been operated and managed by TRU since 2012. The Town of McAdenville's collection system consists of approximately 7 miles of gravity sewer to convey wastewater from the collection system to the TRU-owned McAdenville Lift Station, which conveys waste to Long Creek Wastewater Treatment Plant (WWTP). Pipe diameters range from 4 to 18 inches and pipe ages range from under 10 years to over 75 years. The Town's wastewater collection system is comprised of just over 200 manholes.

With only 288 sewer customers, McAdenville faces significant fiscal challenges in adequately maintaining the collection system. In the long-term, the system is not viable from a financial and operational standpoint. Without a sustained solution they will not be able to pay for the needed rehabilitation and replacement on their own. Future regionalization of the Town's sewer system is key to the Town's long-term financial solvency.

Their inability to take on substantial debt is limited by both existing rates being high and the extremely small customer base. If there were an emergency repair or other failure, the Town's enterprise fund reserves could be wiped out with little option to increase revenues to recuperate the losses. Like the water system the Town cannot charge enough for sewer service to continue the needed level of maintenance and improvements since the overall Town combined enterprise and general fund budget is only $1.7M, split equally.

City of Gastonia/Two Rivers Utilities

The City of Gastonia (City) is a city of 78,473 located in Gaston County, six miles west of McAdenville. Two Rivers Utilities (TRU) is the utility division of the City with 33,211 water customers and 641 miles of water line. TRU successfully serves numerous other local systems including the towns and cities of Gastonia, Cramerton, Lowell, McAdenville, Ranlo, and Clover, S.C., along with emergency connections to Bessemer City, Belmont, and Dallas.

Two Rivers Utilities' water treatment plant uses a high-tech membrane filtration system and is the first in North Carolina to use membrane filters as the primary method of turning lake water into drinking water. A five-year, $65 million modernization of the water treatment plant was completed in 2019 and can treat 27 million gallons of water per day and 5 billion gallons per year of water from Mountain Island Lake. The upgraded clearwell facility can store 4 million gallons of drinking water ready for distribution. Membrane filtration is the newest technology available and raises the safety and quality of drinking water, allows for more efficient processing and less wasted water, and allows TRU to provide water to this growing region and to further system regionalization. TRU's Water Supply and Treatment Division is dedicated to providing superior quality drinking water at a reasonable price to its customers, with a total commitment to protecting the public health.

The Two Rivers Utilities Wastewater Division manages and services 30,212 sewer connections and 647 miles of sewer lines. TRU has been contract-operating the collection system and wastewater treatment plant for ten years under an operations and maintenance agreement with the Town of McAdenville, with the Town purchasing wastewater treatment services since 2019. Before 2019, TRU operated McAdenvilles WWTP for seven years. The system does not include sewer lift stations. The McAdenville Pump Station, owned and operated by Two Rivers Utilities, pumps an average daily flow of 77,420 gallons per day (GPD) to the Long Creek WWTP, also owned and operated by Two Rivers Utilities. This pump station includes flow from the Town, as well as an industrial customer that is a direct sewer customer of Two Rivers Utilities.

TRU is already a valued partner of the Town and successfully serves numerous other local systems including the towns and cities of Gastonia, Cramerton, Bessemer City, High Shoals, Ranlo, Stanley, and Clover, S.C., along with portions of Belmont, Lowell, Dallas, and Kings Mountain. The focus of the Two Rivers Utilities' Wastewater Treatment Division is safety and protection of the environment. As a part of the Division's goal to be an exemplary environmental steward and to

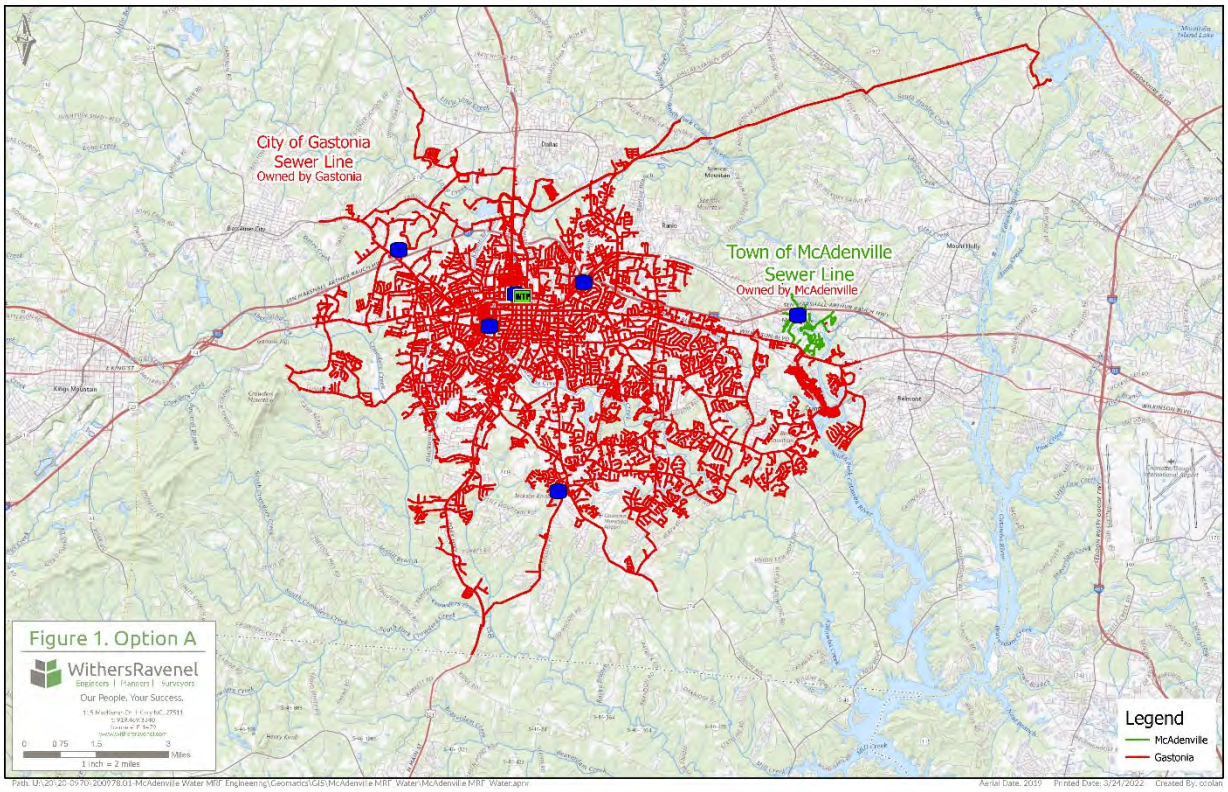
strive for performance that consistently exceeds compliance, the Division has completed a rigorous certification process to meet international ISO 14001 standards for its environmental management system (EMS). ISO 14001 is a voluntary program with established standards for environmental systems. With its completion of the certification process, the Two Rivers Utilities' Wastewater Treatment Division became the first certified ISO 14001 public agency in N.C., making it one of the top five wastewater treatment facilities in the U.S.

Water Options

Option A – Status Quo

Consideration must be given to the possibility that merger may not occur due to financial, economic, or political challenges or a combination thereof. This possibility should be acknowledged, and the potential impacts of the status quo explored. In the following section, the impact on each partner of maintaining the status quo is examined.

Overall, maintaining the status quo does not move the Town of McAdenville toward a stronger, more viable water system. The burden of an extremely aged infrastructure coupled with ongoing operations and maintenance will remain with a smaller, concentrated group who are extremely unlikely to be able to shoulder the financial burden.



Infrastructure Impacts

Town of McAdenville
The Town of McAdenville will continue to own their two systems with Two Rivers Utilities (TRU), operating their water distribution system and purchasing water through the current contract agreement. No new infrastructure is proposed.

City of Gastonia/Two Rivers Utilities
The City of Gastonia/TRU will continue to operate the two water systems owned by McAdenville on a contract basis. TRU performs all operations and maintenance on the systems in addition to supplying water to the systems.

Financial Impacts

In analyzing the financial status of each of the entities incorporated in this study, the following financial assumptions are used and are consistently applied to each entity:

- Natural revenue growth is one-half percent annually.
- Expenses are anticipated to increase between 4% and 5% annually.

Town of McAdenville
The Town of McAdenville will remain challenged financially if it is unable to achieve a merger. As noted in the Overview section, the Town only has two full time employees and must contract with TRU for all system maintenance. Ultimately the Town will need to significantly increase rates to continue to manage the system and complete the necessary improvements outlined in the CIP.

As is the case for all enterprise funds, the fund is expected to raise rates to pay for all expenses of the fund and dollars should accumulate as unrestricted net assets in preparation of funding major capital expenditures that are needed for the system to continue to operate safely.

The need to continue to achieve a positive net income, maintain a positive net position and pay for capital improvements results in the Town needing a revenue increase of 40% for the first four years of the study and an increase of 60% in 2027, the final year of the study.

The average McAdenville water bill of $33.46 is below the median water bill of $36.46 for units within a 50-mile radius. The average bills are based on 5,000 gallons usage as of January 2022.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING INCOME:					
INVESTMENT INCOME	300	300	300	400	500
TOTAL REVENUES	743,884	747,602	751,339	755,194	759,068
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	295,705	713,241	1,302,200	2,132,358	3,881,327
PERCENTAGE INCREASE	40%	40%	40%	40%	60%
TOTAL REVENUES	1,039,590	1,460,843	2,053,538	2,887,552	4,640,395
EXPENDITURES:					
PURCHASE OF WATER (From TRU)	327,600	340,704	354,332	368,505	383,246
METERED SEWER CHARGES	124,800	129,792	134,984	140,383	145,998
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS	41,600	43,264	44,995	46,794	48,666
SYSTEM MONITORING	20,800	21,632	22,497	23,397	24,333
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	547,530	569,727	592,827	616,867	641,884
CAPITAL OUTLAY	730,400	787,023	510,081	537,324	3,995,860
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE	20,438	20,070	19,948	19,702	19,457
TRANSFERS (OUT)					
TOTAL EXPENDITURES	1,298,368	1,376,821	1,122,855	1,173,893	4,657,202
REVENUES OVER EXPENDITURES	(258,779)	84,022	930,683	1,713,659	(16,807)
ACCRUAL ADJUSTMENTS					
NET INCOME	(258,779)	84,022	930,683	1,713,659	(16,807)
UNRESTRICTED NET POSITION	2,631,041	2,715,064	3,645,747	5,359,406	5,342,599
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	202.64%	197.20%	324.69%	456.55%	114.72%

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	40%	$800
2024	40%	$1,928
2025	40%	$3,519
2026	40%	$5,763
2027	60%	$10,490

Town of McAdenville with Debt to cover CIP

At the request of the Town of McAdenville, additional options for the status quo were examined to identify the financial impacts of the status quo to include debt service to pay for the projects outlined in the CIP for the Town. This analysis assumes debt issuance of $7 million in 2023. The debt is assumed to be an installment purchase loan for a term of 15 years at an interest rate of 6%. Annual debt service payments will be just over $700,000 each year.

The need to continue to achieve a positive net income, maintain a positive net position, and pay for capital improvements results in the Town needing a revenue increase of 30% the first two years of the study and 10% for years 2025 through 2027.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS WITH DEBT

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING INCOME:					
INVESTMENT INCOME	300	300	300	300	300
TOTAL REVENUES	743,884	747,602	751,339	755,094	758,868
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	221,779	512,642	641,393	784,101	942,239
PERCENTAGE INCREASE	30%	30%	10%	10%	10%
TOTAL REVENUES	965,663	1,260,244	1,392,732	1,539,195	1,701,107
EXPENDITURES:					
PURCHASE OF WATER (From TRU)	327,600	340,704	354,332	368,505	383,246
METERED SEWER CHARGES	124,800	129,792	134,984	140,383	145,998
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS	41,600	43,264	44,995	46,794	48,666
SYSTEM MONITORING	20,800	21,632	22,497	23,397	24,333
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	547,530	569,727	592,827	616,867	641,884
CAPITAL OUTLAY					
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE	20,438	20,070	19,948	19,702	19,457
NEW DEBT SERVICE		714,270	714,270	714,270	714,270
TRANSFERS (OUT)					
TOTAL EXPENDITURES	567,968	1,304,067	1,327,044	1,350,839	1,375,611
REVENUES OVER EXPENDITURES	397,695	(43,823)	65,687	188,356	325,496
ACCRUAL ADJUSTMENTS					
NET INCOME	397,695	(43,823)	65,687	188,356	325,496
UNRESTRICTED NET POSITION	3,287,515	3,243,693	3,309,380	3,497,736	3,823,232
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	578.82%	248.74%	249.38%	258.93%	277.93%

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	30%	$600
2024	30%	$1,385
2025	10%	$1,733
2026	10%	$2,119
2027	10%	$2,547

Town of McAdenville with Extended CIP

Additionally, options for the status quo were examined to identify the financial impacts of the status quo to include extending the CIP to a true 10-year plan. The CIP was originally created as a 10-year plan but years 5-10 were grouped together and not specifically assigned to a year. In this financial scenario project are spaced further out to alleviate financial burden on the Town.

The need to continue to achieve a positive net income, maintain a positive net position and pay for capital improvements results in the Town needing a revenue increase of 40% in the first year followed by 30% and then 10% for years 2025 through 2027.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS EXTENDED CIP

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING INCOME:					
INVESTMENT INCOME	300	300	300	300	300
TOTAL REVENUES	743,884	747,602	751,339	755,094	758,868
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	295,705	609,227	748,167	902,140	1,072,731
PERCENTAGE INCREASE	40%	30%	10%	10%	10%
TOTAL REVENUES	1,039,590	1,356,829	1,499,506	1,657,234	1,831,599
EXPENDITURES:					
PURCHASE OF WATER (From TRU)	327,600	340,704	354,332	368,505	383,246
METERED SEWER CHARGES	124,800	129,792	134,984	140,383	145,998
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS	41,600	43,264	44,995	46,794	48,666
SYSTEM MONITORING	20,800	21,632	22,497	23,397	24,333
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	547,530	569,727	592,827	616,867	641,884
CAPITAL OUTLAY	730,400	787,023	510,081	537,324	986,359
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE	20,438	20,070	19,948	19,702	19,457
TRANSFERS (OUT)					
TOTAL EXPENDITURES	1,298,368	1,376,821	1,122,855	1,173,893	1,647,700
REVENUES OVER EXPENDITURES	(258,779)	(19,992)	376,651	483,341	183,899
ACCRUAL ADJUSTMENTS					
NET INCOME	(258,779)	(19,992)	376,651	483,341	183,899
UNRESTRICTED NET POSITION	2,631,041	2,611,050	2,987,701	3,471,042	3,654,941
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	202.64%	189.64%	266.08%	295.69%	221.82%

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	40%	$800
2024	30%	$1,647
2025	10%	$2,022
2026	10%	$2,438
2027	10%	$2,900

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities (TRU) will not be significantly impacted if the Town of McAdenville continues with the status quo. The existing agreement to provide water to the Town would remain in place between the entities. TRU has indicated that they will need to increase their costs to the Town for operations and maintenance in the future since they have charged the same rates to the Town of McAdenville since they began offering those services to the Town in 2012. It is unknown what financial impact that increase will have to McAdenville since it is not clear when that increase may take place and how much that increase will be.

The average Two Rivers Utilities water bill of $28.97 is below the median water bill of $34.70 for units within a 50-mile radius. The average bills are based on 5,000 gallons usage as of January 2022.

Organizational Impacts

Town of McAdenville

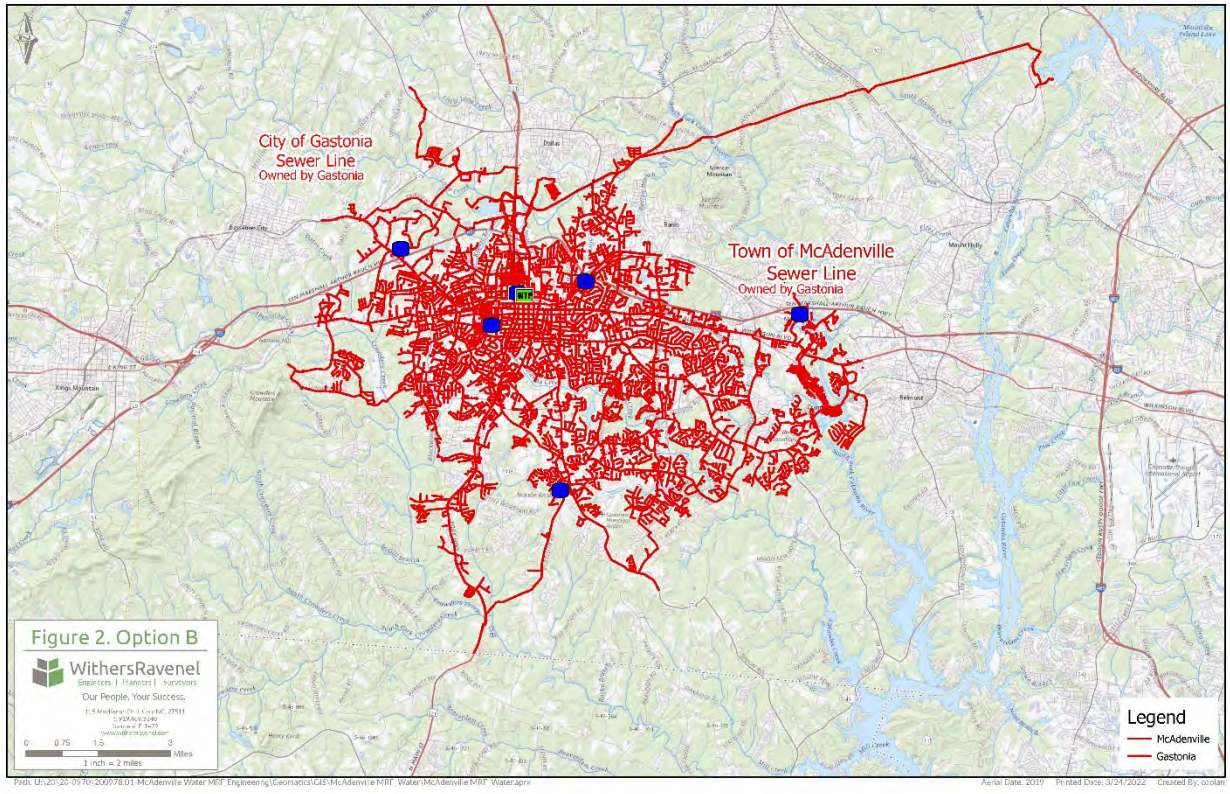
Should the Town of McAdenville choose to maintain the status quo, it will not move McAdenville toward system stability from a management perspective. The Town will not see any direct impacts to staffing.

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities (TRU) is positioned organizationally to maintain the status quo. With current distribution system and water treatment plant staffing levels, staffing is not an anticipated barrier to continuing operations.

Option B – System Merger

One option for further exploration is the Town of McAdenville merging with The City of Gastonia (City)/Two Rivers Utilities (TRU) resulting in TRU owning the water system. The viability of this option is based on the existing arrangement between the two entities – TRU operating the system on a contract basis and TRU currently providing all water to the Town. A merger by the Town reduces the burden of operating and maintaining a water system by shifting the burden of system costs from a few citizens and absorbing those costs into a larger system.



Infrastructure Impacts

Town of McAdenville

The Town of McAdenville would transfer ownership of the Town's existing distribution systems to the City of Gastonia/Two Rivers Utilities, eliminating the need for the agreement with the City to provide water and contract operations and maintenance. No new infrastructure is proposed.

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities would own and maintain the City's existing distribution systems, and the City would assume ownership, operation, and maintenance of the McAdenville distribution systems. This would terminate the agreement to provide water to the Town and provide operations and maintenance support. No new infrastructure is proposed.

Financial Impacts

In analyzing the financial status of each of the entities incorporated in this study, the following financial assumptions are used and are consistently applied to each entity:

- Natural revenue growth is one-half percent annually.
- Expenses are anticipated to increase between 4% and 5% annually.

Town of McAdenville
With the transfer of ownership of the distribution system to the City of Gastonia/Two Rivers Utilities, the salaries and benefits associated with the water system would be absorbed into the general fund of the Town of McAdenville as they represent part of the staff's time working in the water fund.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES					
WATER AND SEWER TAPS					
NONOPERATING INCOME:					
INVESTMENT INCOME					
TOTAL REVENUES	0	0	0	0	0
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	0	0	0	0	0
PERCENTAGE INCREASE	0%	0%	0%	0%	60%
TOTAL REVENUES	0	0	0	0	0
EXPENDITURES:					
PURCHASE OF WATER (From TRU)					
METERED SEWER CHARGES					
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS					
DEPRECIATION					
SYSTEM MONITORING					
MISCELLANEOUS					
TOTAL OPERATING EXPENDITURES	29,610	31,091	32,645	34,277	35,991
CAPITAL OUTLAY					
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE					
NEW DEBT SERVICE		0	0	0	0
TRANSFERS (OUT)					
TOTAL EXPENDITURES	29,610	31,091	32,645	34,277	35,991
REVENUES OVER EXPENDITURES	(29,610)	(31,091)	(32,645)	(34,277)	(35,991)
ACCRUAL ADJUSTMENTS					
NET INCOME	(29,610)	(31,091)	(32,645)	(34,277)	(35,991)
UNRESTRICTED NET POSITION	2,860,210	2,829,120	2,796,474	2,762,197	2,726,206
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	9659.61%	9099.63%	8566.31%	8058.39%	7574.66%

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities (TRU) is positioned to absorb the transfer of ownership of the distribution system to the City of Gastonia/Two Rivers Utilities (TRU). The McAdenville water customers would become TRU water customers.

TWO RIVERS UTILITIES/GASTONIA WATER AND SEWER FUND FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	39,357,452	39,083,743	38,789,846	38,474,907	38,138,038
UTILITIES FOR CITY USE	1,286,854	1,293,289	1,299,755	1,306,254	1,312,785
WATER AND SEWER TAPS	501,834	504,343	506,865	509,399	511,946
OTHER OPERATING REVENUES	309,451	310,998	312,553	314,116	315,686
PRETREATMENT MONITORING CHARGE	69,797	70,146	70,497	70,849	71,204
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING REVENUES:					
PROCEEDES FROM CAPITAL ASSETS	137,310	137,997	138,687	139,380	140,077
INVESTEMENT EARNINGS	13,560	13,628	13,696	13,765	13,834
OTHER NON OPERATING REVENUES	116,003	116,583	117,166	117,752	118,341
TOTAL REVENUES	42,535,846	42,278,029	42,000,103	41,701,216	41,380,478
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER AND SEWER RATE INCREASE	1,967,873	4,006,084	6,114,249	9,627,768	11,927,547
PERCENTAGE INCREASE	5%	5%	5%	8%	5%
TOTAL REVENUES	44,503,718	46,284,113	48,114,353	51,328,984	53,308,025
EXPENDITURES:					
ADMINISTRATION	10,814,683	11,355,417	11,923,188	12,519,347	13,145,315
CUSTOMER SERVICE	628,949	660,396	693,416	728,087	764,491
GIS OTHER OPERATING EXPENDITURES	27,558	28,660	29,807	30,999	32,239
LANDSCAPING COSTS	236,736	246,206	256,054	266,296	276,948
WATER & SEWER STREET MAINTENANCE	0	0	0	0	0
WATER LINE MAINTENANCE	1,483,591	1,542,935	1,604,652	1,668,838	1,735,592
SEWER LINE MAINTENANCE	1,892,667	1,968,374	2,047,108	2,128,993	2,214,153
WATER SUPPLY TREATMENT	4,732,695	4,922,003	5,118,883	5,323,638	5,536,583
FACILITY MAINTENANCE	1,811,764	1,884,235	1,959,604	2,037,988	2,119,508
SEWAGE TREATMENT	7,140,585	7,426,208	7,723,257	8,032,187	8,353,474
RECOVERY RESOURCE OTHER OPERATING EXP	1,553,389	1,615,524	1,680,145	1,747,351	1,817,245
REPAIRS	41,600	43,264	44,995	46,794	48,666
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	30,367,337	31,696,466	33,084,483	34,534,029	36,047,864
CAPITAL OUTLAY	5,657,950	2,747,000	3,236,000	11,530,000	6,978,000
CAPITAL OUTLAY (McAdenville)	730,400	787,023	510,081	537,324	3,995,860
DEBT:					
EXISTING DEBT SERVICE	5,016,779	6,002,749	5,939,099	4,618,464	4,605,656
EXISTING DEBT SERVICE (McAdenville)	20,438	20,070	19,948	19,702	19,457
TOTAL EXPENDITURES	41,792,904	41,253,309	42,789,610	51,239,518	51,646,838
REVENUES OVER EXPENDITURES	2,710,815	5,030,804	5,324,743	89,466	1,661,188
ACCRUAL ADJUSTMENTS					
NET INCOME	2,710,815	5,030,804	5,324,743	89,466	1,661,188
UNRESTRICTED NET POSITION	209,818,885	214,849,688	220,174,431	220,263,897	221,925,084
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	502.04%	520.81%	514.55%	429.87%	429.70%

Organizational Impacts

Town of McAdenville

The Town of McAdenville water system would not continue and would be absorbed within the Gastonia/Two Rivers Utilities system.

City of Gastonia/Two Rivers Utilities

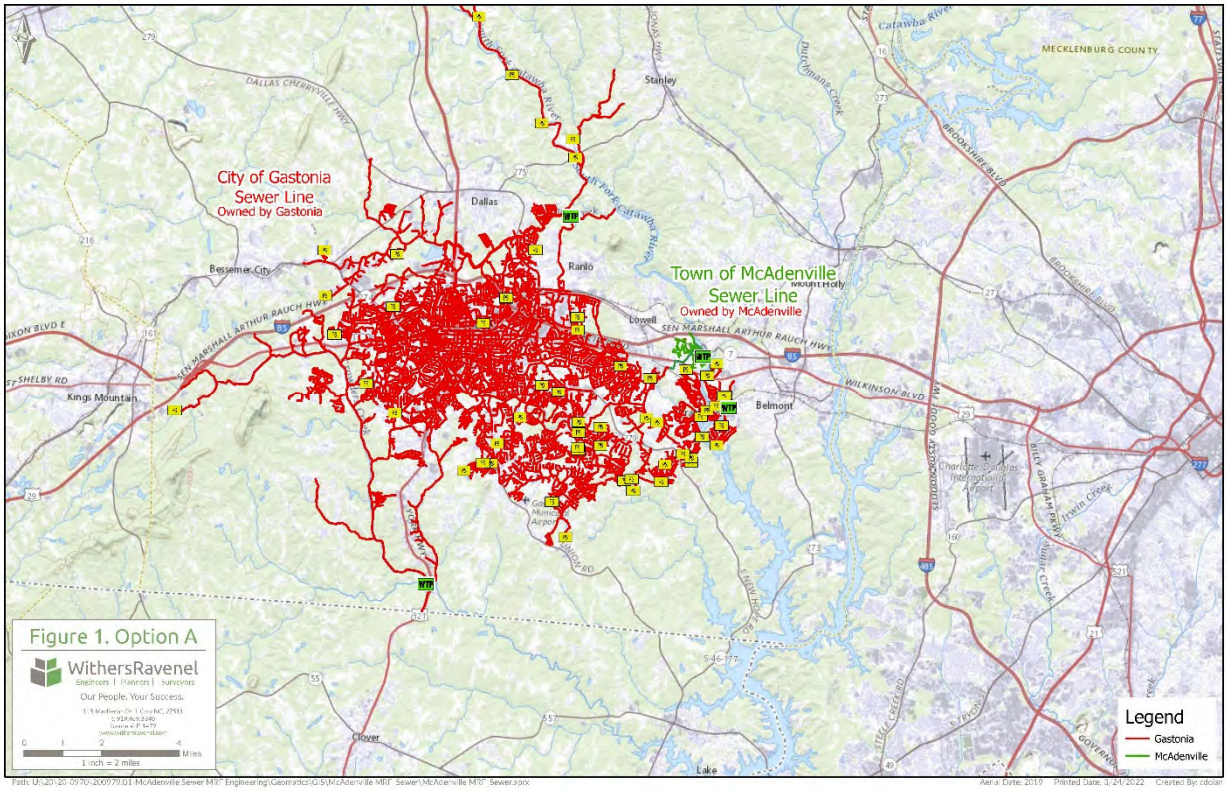
The City of Gastonia/Two Rivers Utilities is positioned to absorb the McAdenville water system into its existing utility structure. The impacts to the City organizationally will be minimal since water treatment, operations, and maintenance are already provided to McAdenville by TRU.

Wastewater Options

Option A – Status Quo

Consideration must be given to the possibility that merger may not occur due to financial, economic, or political challenges or a combination thereof. This possibility should be acknowledged, and the potential impacts of the status quo explored. In the following section, the impact on each partner of maintaining the status quo is examined.

Overall, maintaining the status quo does not move the Town of McAdenville toward a stronger, more viable wastewater system. The burden of an extremely aged infrastructure coupled with ongoing operations and maintenance will remain with a smaller, concentrated group who are extremely unlikely to be able to shoulder the financial burden.



Infrastructure Impacts

Town of McAdenville
The Town of McAdenville will continue to own their collection system with Two Rivers Utilities (TRU), operating their wastewater collection system and treating wastewater through the current contract agreement. No new infrastructure is proposed.

City of Gastonia/Two Rivers Utilities
The City of Gastonia TRU will continue to operate the wastewater system owned by McAdenville on a contract basis. TRU performs all operations and maintenance on the system in addition to treating wastewater for McAdenville's customers and one direct industrial wastewater customer located within McAdenville.

Financial Impacts

In analyzing the financial status of each of the entities incorporated in this study, the following financial assumptions are used and are consistently applied to each entity:

- Natural revenue growth is one-half percent annually.
- Expenses are anticipated to increase between 4% and 5% annually.

Town of McAdenville
The Town of McAdenville will remain challenged financially if it is unable to achieve a merger. As noted in the Overview section, the Town only has two full time employees and must contract with TRU for all system maintenance. Ultimately the Town will need to significantly increase rates to continue to manage the system and complete the necessary improvements outlined in the CIP.

As is the case for all enterprise funds, the fund is expected to raise rates to pay for all expenses of the fund and dollars should accumulate as unrestricted net assets in preparation of funding major capital expenditures that are needed for the system to continue to operate safely.

The need to continue to achieve a positive net income, maintain a positive net position and pay for capital improvements results in the Town needing a revenue increase of 40% for the first four years of the study and an increase of 60% in 2027, the final year of the study.

The average McAdenville sewer bill of $57.25 is above the median wastewater bill of $46.97 for units within a 50-mile radius. The average bills are based on 5,000 gallons usage as of January 2022.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING INCOME:					
INVESTMENT INCOME	300	300	300	400	500
TOTAL REVENUES	743,884	747,602	751,339	755,194	759,068
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	295,705	713,241	1,302,200	2,132,358	3,881,327
PERCENTAGE INCREASE	40%	40%	40%	40%	60%
TOTAL REVENUES	1,039,590	1,460,843	2,053,538	2,887,552	4,640,395
EXPENDITURES:					
PURCHASE OF WATER (From TRU)	327,600	340,704	354,332	368,505	383,246
METERED SEWER CHARGES	124,800	129,792	134,984	140,383	145,998
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS	41,600	43,264	44,995	46,794	48,666
SYSTEM MONITORING	20,800	21,632	22,497	23,397	24,333
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	547,530	569,727	592,827	616,867	641,884
CAPITAL OUTLAY	730,400	787,023	510,081	537,324	3,995,860
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE	20,438	20,070	19,948	19,702	19,457
TRANSFERS (OUT)					
TOTAL EXPENDITURES	1,298,368	1,376,821	1,122,855	1,173,893	4,657,202
REVENUES OVER EXPENDITURES	(258,779)	84,022	930,683	1,713,659	(16,807)
ACCRUAL ADJUSTMENTS					
NET INCOME	(258,779)	84,022	930,683	1,713,659	(16,807)
UNRESTRICTED NET POSITION	2,631,041	2,715,064	3,645,747	5,359,406	5,342,599
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	202.64%	197.20%	324.69%	456.55%	114.72%

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	40%	$1,027
2024	40%	$2,477
2025	40%	$4,522
2026	40%	$7,404
2027	60%	$13,477

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities (TRU) will not be significantly impacted if the Town of McAdenville continues with the status quo. The existing agreement to provide wastewater treatment to the Town would remain in place between the entities. TRU has indicated that they will need to increase their costs to the Town for operations and maintenance in the future since

they have charged the same rates to the Town of McAdenville since they began offering those services to the Town. It is unknown what financial impact that increase will have to McAdenville since it is not clear when that increase may take place and how much that increase will be.

The average Two Rivers Utilities sewer bill of $40.17 is below the median wastewater bill of $44.16 for units within a 50-mile radius. The average bills are based on 5,000 gallons usage as of January 2022.

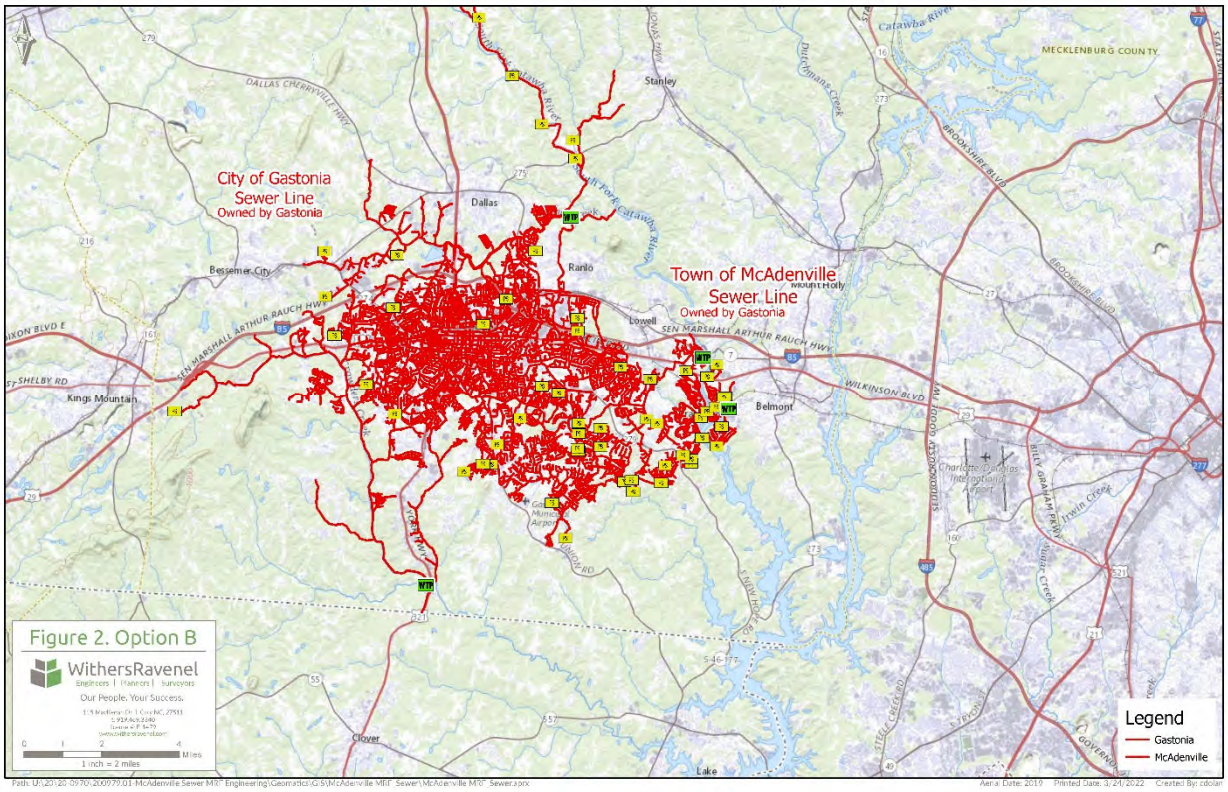
Organizational Impacts

Town of McAdenville
Should the Town of McAdenville choose to maintain the status quo, it will not move McAdenville toward system stability from a management perspective. The Town will not see any direct impacts to staffing.

City of Gastonia/Two Rivers Utilities
The City of Gastonia/Two Rivers Utilities (TRU) is positioned organizationally to maintain the status quo. With current collection system and wastewater treatment plant staffing levels, staffing is not an anticipated barrier to continuing operations.

Option B – System Merger

One option for further exploration is the Town of McAdenville merging with The City of Gastonia/Two Rivers Utilities (TRU) resulting in TRU owning the wastewater system. The viability of this option is based on the existing arrangement between the two entities – TRU operating the system on a contract basis and TRU currently providing all wastewater treatment services to the Town. A merger by the Town reduces the burden of operating and maintaining a wastewater system by shifting the burden of system costs from a few citizens and absorbing those costs into a larger system.



Infrastructure Impacts

Town of McAdenville
The Town of McAdenville would transfer ownership of the Town's existing collection system to the City of Gastonia/Two Rivers Utilities, eliminating the need for the agreement with the City to provide wastewater treatment and contract operations and maintenance. No new infrastructure is proposed.

City of Gastonia/Two Rivers Utilities
The City of Gastonia/Two Rivers Utilities would own and maintain the City's existing collection system, and the City would assume ownership, operation, and maintenance of the McAdenville collection system. This would terminate the agreement to provide wastewater treatment to the Town and provide operations and maintenance support. No new infrastructure is proposed.

Financial Impacts

In analyzing the financial status of each of the entities incorporated in this study, the following financial assumptions are used and are consistently applied to each entity:

- Natural revenue growth is one-half percent annually.

- Expenses are anticipated to increase between 4% and 5% annually.

Town of McAdenville

With the transfer of ownership of the collection system to the City of Gastonia/Two Rivers Utilities, the salaries and benefits associated with the wastewater system would be absorbed into the general fund of the Town of McAdenville as they represent part of the staff's time working in the wastewater fund.

TOWN OF MCADENVILLE WATER AND SEWER FUND
FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES					
WATER AND SEWER TAPS					
NONOPERATING INCOME:					
INVESTMENT INCOME					
TOTAL REVENUES	0	0	0	0	0
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER RATE INCREASE	0	0	0	0	0
PERCENTAGE INCREASE	0%	0%	0%	0%	60%
TOTAL REVENUES	0	0	0	0	0
EXPENDITURES:					
PURCHASE OF WATER (From TRU)					
METERED SEWER CHARGES					
SALARIES AND BENEFITS	29,610	31,091	32,645	34,277	35,991
REPAIRS					
DEPRECIATION					
SYSTEM MONITORING					
MISCELLANEOUS					
TOTAL OPERATING EXPENDITURES	29,610	31,091	32,645	34,277	35,991
CAPITAL OUTLAY					
TRANSFER OF CAPITAL ASSETS					
DEBT:					
EXISTING DEBT SERVICE					
NEW DEBT SERVICE		0	0	0	0
TRANSFERS (OUT)					
TOTAL EXPENDITURES	29,610	31,091	32,645	34,277	35,991
REVENUES OVER EXPENDITURES	(29,610)	(31,091)	(32,645)	(34,277)	(35,991)
ACCRUAL ADJUSTMENTS					
NET INCOME	(29,610)	(31,091)	(32,645)	(34,277)	(35,991)
UNRESTRICTED NET POSITION	2,860,210	2,829,120	2,796,474	2,762,197	2,726,206
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	9659.61%	9099.63%	8566.31%	8058.39%	7574.66%

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities (TRU) is positioned to absorb the transfer of ownership of the collection system to the City of Gastonia/Two Rivers Utilities (TRU). The McAdenville wastewater customers would become TRU wastewater customers.

TRU's system would not be significantly impacted financially by absorbing the McAdenville system.

TWO RIVERS UTILITIES/GASTONIA WATER AND SEWER FUND FINANCIAL ANALYSIS

LINE ITEM	YEAR 1 2023	YEAR 2 2024	YEAR 3 2025	YEAR 4 2026	YEAR 5 2027
REVENUES:					
WATER AND SEWER CHARGES	39,357,452	39,083,743	38,789,846	38,474,907	38,138,038
UTILITIES FOR CITY USE	1,286,854	1,293,289	1,299,755	1,306,254	1,312,785
WATER AND SEWER TAPS	501,834	504,343	506,865	509,399	511,946
OTHER OPERATING REVENUES	309,451	310,998	312,553	314,116	315,686
PRETREATMENT MONITORING CHARGE	69,797	70,146	70,497	70,849	71,204
WATER AND SEWER CHARGES	739,263	742,959	746,674	750,407	754,159
WATER AND SEWER TAPS	4,322	4,343	4,365	4,387	4,409
NONOPERATING REVENUES:					
PROCEEDES FROM CAPITAL ASSETS	137,310	137,997	138,687	139,380	140,077
INVESTEMENT EARNINGS	13,560	13,628	13,696	13,765	13,834
OTHER NON OPERATING REVENUES	116,003	116,583	117,166	117,752	118,341
TOTAL REVENUES	42,535,846	42,278,029	42,000,103	41,701,216	41,380,478
NEW SOURCES OF REVENUE:					
REVENUE FROM WATER AND SEWER RATE INCREASE	1,967,873	4,006,084	6,114,249	9,627,768	11,927,547
PERCENTAGE INCREASE	5%	5%	5%	8%	5%
TOTAL REVENUES	44,503,718	46,284,113	48,114,353	51,328,984	53,308,025
EXPENDITURES:					
ADMINISTRATION	10,814,683	11,355,417	11,923,188	12,519,347	13,145,315
CUSTOMER SERVICE	628,949	660,396	693,416	728,087	764,491
GIS OTHER OPERATING EXPENDITURES	27,558	28,660	29,807	30,999	32,239
LANDSCAPING COSTS	236,736	246,206	256,054	266,296	276,948
WATER & SEWER STREET MAINTENANCE	0	0	0	0	0
WATER LINE MAINTENANCE	1,483,591	1,542,935	1,604,652	1,668,838	1,735,592
SEWER LINE MAINTENANCE	1,892,667	1,968,374	2,047,108	2,128,993	2,214,153
WATER SUPPLY TREATMENT	4,732,695	4,922,003	5,118,883	5,323,638	5,536,583
FACILITY MAINTENANCE	1,811,764	1,884,235	1,959,604	2,037,988	2,119,508
SEWAGE TREATMENT	7,140,585	7,426,208	7,723,257	8,032,187	8,353,474
RECOVERY RESOURCE OTHER OPERATING EXP	1,553,389	1,615,524	1,680,145	1,747,351	1,817,245
REPAIRS	41,600	43,264	44,995	46,794	48,666
MISCELLANEOUS	3,120	3,245	3,375	3,510	3,650
TOTAL OPERATING EXPENDITURES	30,367,337	31,696,466	33,084,483	34,534,029	36,047,864
CAPITAL OUTLAY	5,657,950	2,747,000	3,236,000	11,530,000	6,978,000
CAPITAL OUTLAY (McAdenville)	730,400	787,023	510,081	537,324	3,995,860
DEBT:					
EXISTING DEBT SERVICE	5,016,779	6,002,749	5,939,099	4,618,464	4,605,656
EXISTING DEBT SERVICE (McAdenville)	20,438	20,070	19,948	19,702	19,457
TOTAL EXPENDITURES	41,792,904	41,253,309	42,789,610	51,239,518	51,646,838
REVENUES OVER EXPENDITURES	2,710,815	5,030,804	5,324,743	89,466	1,661,188
ACCRUAL ADJUSTMENTS					
NET INCOME	2,710,815	5,030,804	5,324,743	89,466	1,661,188
UNRESTRICTED NET POSITION	209,818,885	214,849,688	220,174,431	220,263,897	221,925,084
UNRESTRICTED NET POSITION / TOTAL EXPENDITURES	502.04%	520.81%	514.55%	429.87%	429.70%

Organizational Impacts

Town of McAdenville

The Town of McAdenville wastewater system would not continue and would be absorbed within the Gastonia/Two Rivers Utilities system.

City of Gastonia/Two Rivers Utilities

The City of Gastonia/Two Rivers Utilities is positioned to absorb the McAdenville wastewater system into its existing utility structure. The impacts to the City organizationally will be minimal since wastewater treatment, operations, and maintenance are already provided to McAdenville by TRU.

Funding Opportunities

On the cusp of having more funding than ever before, time is of the essence to be aligned with stakeholders and to be prepared to move forward to benefit from the many funding opportunities. Additional engineering analysis will be needed once a path forward is selected. If capital projects have been identified, as a part of this report or from existing capital improvement needs, the most probable funding sources identified at the time of this report are from the following programs:

- American Rescue Plan Act

The American Rescue Plan Act (ARPA) provides $350 billion nationally through the Coronavirus State and Local Fiscal Recovery Funds for eligible state, local, territorial, and Tribal governments to respond to the COVID-19 emergency. This funding is subject to the requirements specified in the Final Rule adopted by the United States Department of the Treasury (Treasury), which describes whether a program, project, or service is an eligible use. The Interim Final Rule was published and became effective May 17, 2021. Treasury published the Final Rule January 6, 2022 and will become effective April 1, 2022. North Carolina received approximately $8.492 billion in ARPA Funds. With the passing of the 2021 – 2022 North Carolina state budget, the Department of Environmental Quality was allocated approximately $1.5 billion for water and sewer infrastructure investments. The Division of Water Infrastructure will administer these funds. Of the $1.5 billion, approximately $650 million will be available for competitive funding, with a deadline to submit an application being May 2, 2022. American Rescue Plan Funds must be obligated by December 31, 2024, with the period of performance ending December 31, 2026.

- Drinking Water State Revolving Fund

The Drinking Water State Revolving Fund (DWSRF) was established by the 1996 amendments to the Safe Drinking Water Act (SDWA). The DWSRF is a financial assistance program to help water systems and states to achieve the health protection objectives of the Safe Drinking Water Act. The DWSRF provides low-interest loans with competitive principal forgiveness opportunities. The loan terms may not exceed 30 years or the useful life of the project. Interest rates for the loan must be at or below market rate and could include interest-free loans.

- Clean Water State Revolving Fund

The Clean Water State Revolving Fund (CWSRF) was established by the 1987 amendments to the Clean Water Act (CWA) as a financial assistance program for a wide range of water infrastructure projects. The CWSRF program funds a wide variety of water quality protection efforts. The program's flexibility and broad range of project eligibilities enable North Carolina and other states to target CWSRF funds to their specific water quality priorities. State innovation and statutory changes have resulted in an evolution of project eligibilities since the program was authorized in 1987. The CWSRF provides low-interest loans with competitive principal forgiveness opportunities. The loan terms may not exceed

30 years or the useful life of the project. Interest rates for the loan must be at or below market rate and could include interest-free loans.

- United States Department of Agriculture – Rural Development Water and Environmental Programs

Through Rural Utilities Service Water and Environmental Programs (WEP), rural communities obtain the technical assistance and financing necessary to develop drinking water and waste disposal systems. Safe drinking water and sanitary waste disposal systems are vital not only to public health, but also to the economic vitality of rural America. Rural Development is a leader in helping rural America improve the quality of life and increase the economic opportunities for rural people. The Water and Environmental Program provides funding for the construction of water and waste facilities in rural communities and is proud to be the only Federal program exclusively focused on rural water and waste infrastructure needs of rural communities with populations of 10,000 or less.

- Infrastructure Investment and Jobs Act

The recently passed Infrastructure Investment and Jobs Act will rebuild America's roads, bridges, and rails, expand access to clean drinking water, ensure every American has access to high-speed internet, tackle the climate crisis, advance environmental justice, and invest in communities that have too often been left behind. Preliminary estimates indicate North Carolina will receive over $9 billion of these funds. This estimate includes approximately $440 million for clean drinking water in North Carolina through the Clean Water State Revolving Fund and the Drinking Water State Revolving Fund. Funds will be awarded over the next five years.

Conclusions

This report is intended to be one component of the decision-making process the partners can use as they begin to craft decisions that move them toward stronger, more viable water and wastewater systems for the McAdenville area. The information contained within the report is best used as a guide for next steps – which option appears worth further exploration in the form of a preliminary engineering report (PER), pursuing funding opportunities, and providing the best opportunity to work together.

WithersRavenel appreciates the opportunity to support the Town of McAdenville with this important feasibility study and is happy to assist McAdenville and partners with further exploration of the preferred option and path forward including any future funding opportunities and any possible debt issuance processes with the local government commission.

TABLE 4
TOWN OF MCADENVILLE
CURRENT RATES

	Current	2023	2024	2025	2026	
WATER INSIDE						
Customer Charge	$4.28	$6.85	$10.96	$17.53	$33.31	
Per 1000 gallons	$5.88	$9.41	$15.05	$24.08	$45.76	per 1000 gal
Volume Rate	1.3 x City of G	1.3 x City of	1.3 x City of	1.3 x City of	1.3 x City of Gastonia rates	
Unmetered Service- Residential	$23.51	$37.62	$60.19	$96.30	$182.96	based on 4,000 gallons
Fire Line Service (2")	$26.71	$42.74	$68.38	$109.40	$207.87	
WATER OUTSIDE						
Customer Charge	$4.25	$6.80	$10.88	$17.41	$33.08	
Per 1000 gallons	$7.05	$11.28	$18.05	$28.88	$54.87	
Volume Rate	-	-	-	-	-	
Unmetered Service- Residential	$28.21	$45.14	$72.22	$115.55	$219.54	
Fire Line Service (2")	$32.07	$51.31	$82.10	$131.36	$249.58	
SEWER INSIDE						
Customer Charge	$4.68	$7.49	$11.98	$19.17	$36.42	
Per 1000 gallons	$10.51	$16.82	$26.91	$43.05	$81.79	
Unmetered Service- Residential	$42.07	$67.31	$107.70	$172.32	$327.41	based on 4,000 gallons
Minimum Montly Charge (2,500gal)	**$49.91**	$79.86	$127.77	$204.43	$388.42	
Water with Customer charge	$18.94	$30.30	$48.49	$77.58	$147.40	
Sewer with Customer Charge	$30.97	$49.55	$79.28	$126.85	$241.02	
Irrigation	$14.70	$23.52	$37.63	$60.21	$114.40	
SEWER OUTSIDE						
Customer Charge	$4.68	$7.49	$11.98	$19.17	$36.42	
Per 1000 gallons	$12.50	$20.00	$32.00	$51.20	$97.28	
Unmetered Service- Residential	$49.99	$79.98	$127.97	$204.76	$389.04	
Minimum Montly Charge (2,500gal)	**$57.80**	$92.48	$147.97	$236.75	$449.82	
Water with Customer charge	$21.88	$35.01	$56.01	$89.62	$170.28	
Sewer with Customer Charge	$35.92	$57.47	$91.96	$147.13	$279.54	
Irrigation	$17.63	$28.21	$45.13	$72.21	$137.20	

	Current	2023	2024	2025	2026
Rates per 5,000 Gallons (Water)	**$33.68**	**$53.89**	**$86.22**	**$137.95**	**$262.11**
Rates per 5,000 Gallons (Sewer)	**$57.23**	**$91.57**	**$146.51**	**$234.41**	**$445.39**
Combined Rate	**$90.91**	**$145.46**	**$232.73**	**$372.37**	**$707.50**

* Revenue Increase to Rate increase per EFC Survey data differentials-30%

Attachment – 5

Distressed Designation Resolution

RESOLUTION REQUESTING DISTRESSED UTILITY DESIGNATION FOR THE TOWN OF MCADENVILLE WATER/SEWER SYSTEM
Resolution No. 2022-006

WHEREAS, Session Law 2020-79 was signed into law on July 1, 2020 to improve viability of the water and wastewater systems of certain units of local government; the Viable Utility Reserve was established in the Water Infrastructure fund to be used for grants to include the study of rates, asset inventory and assessment and/or merger and regionalization options; the State Water Infrastructure Authority and the Local Government Commission have developed criteria to assess local government units and identify distressed units, and

WHEREAS, The Town of McAdenville has embarked on the process outlined by SWIA and the LGC for consideration in becoming designated as a non-viable distressed unit based on financial, managerial, and technical challenges faced by the Town which affect the long-term sustainability of the water and sewer utility, and

WHEREAS, The Town of McAdenville has identified its current utility manager, Two Rivers Utilities, as a willing and able partner for a future consolidation, and

WHEREAS, The Town of McAdenville intends to conduct construction projects that have been identified as critical for the future systems consolidation and has need for state grant assistance to carry out the priority projects, and

WHEREAS, The Town of McAdenville has already completed substantial planning efforts financially supported by the Division of Water Infrastructure, including Asset Inventory and Assessments for both systems, and Merger and Regionalization Feasibility Studies for both systems whose results support future system consolidation.

NOW THEREFORE BE IT RESOLVED, BY THE TOWN COUNCIL OF THE TOWN OF MCADENVILLE:

That the Town of McAdenville, if designated as distressed, will complete the viable utility requirements in §159G-45(b) by:

1. Conducting an asset assessment and rate study. (completed in 2020)
2. Participate in a training and educational program. (Town applied for training funding within a construction application Spring 2022)
3. Develop a short-term and long-term action plan considering all of the following:
    a. Infrastructure repair, maintenance, and management.
    b. Continuing education of the governing board and system operating staff.
    c. Long-term financial management plan.

That the Town of McAdenville acknowledges that the State Water Infrastructure Authority and Local Government Commission can impose specific conditions on grants from the Viable Utility Reserve.

That the Town will provide adequate access to staff, documents, equipment, and other resources pertinent to complete any future VUR projects, and upon completion of the project provide good faith effort to implement the short-term and long-term plan to achieve viable utility infrastructure measures.

That Jim Robinette, Mayor, and Lesley Dellinger, Town Administrator/Clerk, the Authorized Officials, and successors so titled, are hereby authorized to execute and file these materials for consideration on behalf of the Town with the State of North Carolina for a distressed designation to aid in the completion of the projects to make system consolidations possible.

That the Authorized Officials, and successors so titled, are hereby authorized and directed to furnish such information as the appropriate State agency may request in connection with such process: to make the assurances as contained above; and to execute such other documents as may be required in connection with this process.

That the Town has substantially complied or will substantially comply with all Federal, State, and local laws, rules, regulations, and ordinances applicable to the designation and to future Federal and State grants pertaining thereto.

Adopted this the 9th of June, 2022 at McAdenville, North Carolina.

Jim Robinette
Signature of Chief Executive Officer

Mayor
Title

CERTIFICATION BY RECORDING OFFICER

The undersigned duly qualified and acting Clerk of the Town of McAdenville does hereby certify: That the above/attached resolution is a true and correct copy of the resolution authorizing the filing of request for a distressed designation with the State of North Carolina, as regularly adopted at a legally convened meeting of the Town of McAdenville duly held on the 9th day of June 2022; and, further, that such resolution has been fully recorded in the journal of proceedings and records in my office. IN WITNESS WHEREOF, I have hereunto set my hand this 9th day of June, 2022.

Lesley Dellinger
Signature of Recording Officer

Town Clerk
Title of Recording Officer

Attachment – 6

NC Rural Water Rate Study

2021 TOWN OF MCADENVILLE RATE STUDY SUMMARY

TRU ANNUAL INCREASE OF 5% AND MCADENVILLE INCREASE OF 2% OVER INCREASE OF TRU ANNUALLY

WATER/SEWER 5 YEAR PROJECTION OF REVENUE/EXPENSE	FY 20-21	YEAR 1 FY 21-22	YEAR 2 FY 22-23	YEAR 3 FY 23-24	YEAR 4 FY 24-25	YEAR 5 FY 25-26
TOTAL PROJECTED EXPENDITURES						
BUDGETED EXPENDITURES (FY 2020-2021)						
ADMINSTRATION	$ 24,400.00	$ 27,300.00	$ 27,300.00	$ 27,982.50	$ 28,682.06	$ 29,399.11
OPERATIONS AND MAINTENANCE	$ 544,216.92	$ 63,900.00	$ 63,900.00	$ 65,497.50	$ 67,134.94	$ 68,813.31
WATER PURCHASE (5% Annual Increase)		$ 315,000.00	$ 330,750.00	$ 347,287.50	$ 364,651.88	$ 382,884.47
SEWER TREATMENT (5% Annual Increase)		$ 120,000.00	$ 126,000.00	$ 132,300.00	$ 138,915.00	$ 145,860.75
ADMIN INFLATION (2.5% COLA)			$ 682.50	$ 699.56	$ 717.05	$ 734.98
O&M INFLATION (2.5% of Operations and Maintenance Cost)			$ 1,597.50	$ 1,637.44	$ 1,678.37	$ 1,720.33
DEPRECIATION (2019-2020 Audit)	$ 42,547.00	$ 44,000.00	$ 44,000.00	$ 44,000.00	$ 44,000.00	$ 44,000.00
CAPITAL OUTLAY	$ 187,700.00	$ 150,000.00	$ 150,000.00	$ 150,000.00	$ 150,000.00	$ 150,000.00
GRANT PROJECT BUDGET		$ 300,000.00				
DUE TO OTHER FUND	$ -	$ -	$ -	$ -	$ -	$ -
DEBT SERVICE	$ 20,683.08	$ 20,685.00	$ 20,685.00	$ 20,685.00	$ 20,685.00	$ 20,685.00
TOTAL EXPENDITURES	$ 819,547.00	$ 1,040,885.00	$ 764,915.00	$ 790,089.50	$ 816,464.30	$ 844,097.95
SALES PROJECTED FROM RATES						
TOTAL PROJECTED SALES FROM WATER RATES	$ 128,082.22	$ 128,082.22	$ 128,082.22	$ 128,082.22	$ 128,082.22	$ 128,082.22
TOTAL PROJECTED SALES FROM SEWER RATES	$ 151,124.89	$ 151,124.89	$ 151,124.89	$ 151,124.89	$ 151,124.89	$ 151,124.89
TOTAL PROJECTED SALES FROM INDUSTRIAL RATES	$ 383,500.00	$ 383,500.00	$ 383,500.00	$ 383,500.00	$ 383,500.00	$ 383,500.00
TOTAL PROJECTED OTHER REVENUE	$ 8,000.00	$ 319,350.00	$ 19,350.00	$ 19,350.00	$ 19,350.00	$ 19,350.00
TOTAL PROJECTED SALES AND OTHER REVENUE	$ 670,707.11	$ 982,057.11	$ 682,057.11	$ 682,057.11	$ 682,057.11	$ 682,057.11
REVENUE OVER (UNDER) EXPENSES	$ (148,839.89)	$ (58,827.89)	$ (82,857.89)	$ (108,032.39)	$ (134,407.19)	$ (162,040.84)

WATER/SEWER REVENUE PROJECTION WITH RATE INCREASE ABOVE	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
REVENUE OVER (UNDER) EXPENSES COVERING COST IN YEAR 1 AND MAINTAINING 2% ANNUAL INCREASE OVER TWO RIVERS UTILITIES INCREASE	$ 440.21	$ 103.47	$ 280.76	$ 1,032.38	$ 2,423.99
	8.50%	**7%**	**7%**	**7%**	**7%**

NC RWA TRAINING SUPPORT

Attachment – 7

DWI/LGC Presentation 30 March 2022

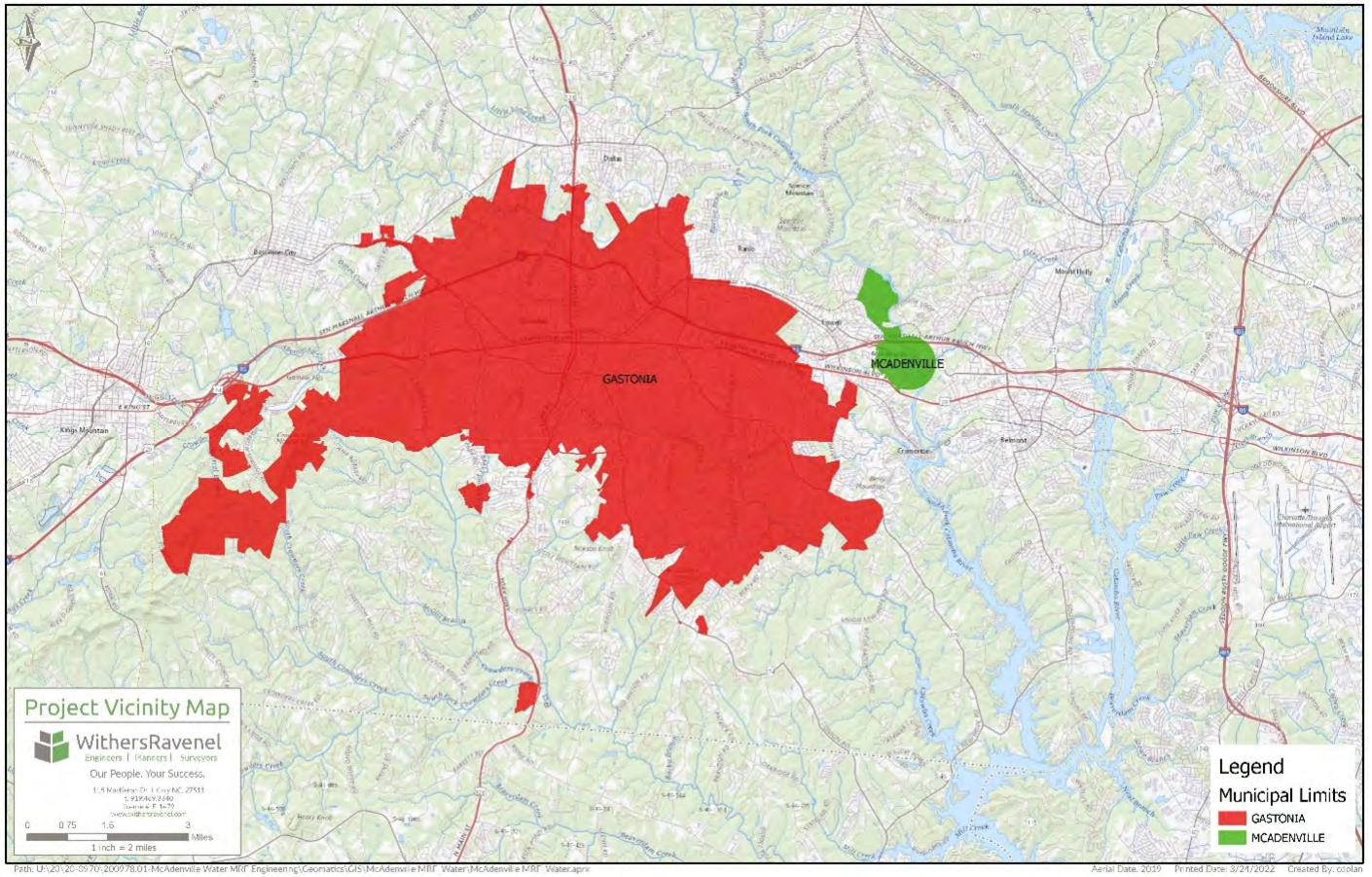
McAdenville Systems Consolidation Projects

Non-Viable Utility Systems Review

March 30, 2022

Background

System Overview



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System Overview: Water

- Water: 376 connections, assets include: 2 distribution systems each with its own PRV, 10 miles of distribution lines (including valves and hydrants), emergency water supply connection with Lowell

Risk Score	Percent	Inch-Feet	$23/Inch/Foot
LOW	1%	4,272	$0.10 M
MEDIUM	55%	172,061	$3.96 M
SIGNIFICANT	36%	111,703	$2.57 M
HIGH	7%	23,181	$0.53 M
EXTREME	0%	0	$0.00 M
TOTAL	**100%**	**311,218**	**$7.16 M**

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System Overview: Sewer

- Sewer: 295 connections, assets include: 6.5 miles gravity sewer lines, 200 manholes

Risk Score	Percent	Inch-Feet	$23/Inch-Foot	$12/Inch-Foot	$13.65 Weighted/Inch-Foot
LOW	4%	11,682	$0.27 M	$0.14 M	$0.16 M
MEDIUM	65%	186,405	$4.29 M	$2.24 M	$2.54 M
SIGNIFICANT	20%	57,609	$1.32 M	$0.69 M	$0.79 M
HIGH	11%	32,293	$0.74 M	$0.39 M	$0.44 M
EXTREME	0%	0	$0.00 M	$0.00 M	$0.00 M
TOTAL	**100%**	**287,989**	**$6.62 M**	**$3.46 M**	**$3.93 M**

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Background: Previous Studies

- Conversations around potential system mergers have been occurring between both organizations since 2011
  - Prior to Jan 2012 when TRU began operating the system, all system work was reactive.
  - A major goal was to take the Town's failing wastewater treatment plant offline.

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Financials: Rates

- Combined rates for water and sewer service at 5,000 gallons usage is $90.88.
- 2021 Rural Water Rate Study resulted in a rate increase of 8.5%.
- TRU hasn't adjusted their contract operation rate since it started managing the system.
- TRU needs to raise rates for contract operations 50%.

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Financials: Existing Debt

- $20,000 per year for the next 10 years for current loans.
- As soon as necessary capital projects start to be implemented, the system is no longer financially viable.

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Financials: CIP

TOWN OF MCANDENVILLE WATER AND SEWER FUND CAPITAL IMPROVEMENTS PLAN

PROJECT LOCATION	YEAR 1 2022	YEAR 2 2023	YEAR 3 2024	YEAR 4 2025	YEAR 5 2026	YEAR 6+ 2027
SEWER COLLECTION						
Pharr Line- Northern Section		370,084				
Pharr Line- Southern Section			318,823			
Poplar Street & Aviary Court						900,268
WATER DISTRIBUTION						
Correct Cross-Connection at I-85 Plant	398,623					
Correct Cross-Connection at Complex 9/23 Plant		360,316				
Town of McAdenville Pressure Reducing Valve [1]	92,298					
Ford Drive and Oak Drive				510,081		
Main Street						458,743
Wesleyan Drive Interconnetion						768,671
Poplar Street and Aviary Court					537,324	
Pine Street and Fir Street						217,688
Mockingbird Lane						122,987
Hickory Grove Road						51,655
Riverside Drive and Rankin Road						1,475,849
ANNUAL TOTAL:	490,921	730,400	318,823	510,081	537,324	3,995,860

TOTAL CIP NEEDS: 6,583,408

[1] Project is in design now

- Only 376 water customers and 295 sewer customers.

Financials: Long-Term Outlook

- Long-term financial solvency is not attainable: MRF: (status quo- no merger)
- Increase revenue by 40% each year over the next 4 years, and 60% in year 5

WATER

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	40%	$800
2024	40%	$1,928
2025	40%	$3,519
2026	40%	$5,763
2027	60%	$10,490

SEWER

Fiscal Year	Potential Revenue Increase Needed	Potential Annual Increase to Customers
2023	40%	$1,027
2024	40%	$2,477
2025	40%	$4,522
2026	40%	$7,404
2027	60%	$13,477

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Financials: LGC Unit Letters

- LGC Unit Letter 2006
- LGC Unit Letter January 14, 2020

Financials: Fund Balance

- Significant rate adjustments since 2006 and the addition of system development fees which has resulted in the majority of the fund balance.
- Since the Town is small, there are no additional opportunities for another development like this, so no big opportunity to continue building the fund balance

Managerial: Human Resources

- 2 Staff Members at the Town
  - Neither have certifications to operate and manage water or sewer system.
  - The water/sewer fund only supports 50% hourly salary of the 2nd employee who does the system billing
- TRU under contract to provide O&M since 2012
  - Improvements in regulatory compliance

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Technical: Limited Staff Knowledge

- CIP- haven't been able to carry out more projects because of limited staff time and lack of expertise in carrying out large infrastructure projects.

Technical: Limited Infrastructure

- Limited infrastructure: differing levels of fire service in McAdenville.
  - Crossroads Distribution System
  - Wesleyan Drive Interconnect
  - Low-income section in town is affected by this situation
- Dependent on contract with TRU for water (purchase) and wastewater (treatment).
- 2 separate water distribution systems cause significant backpressure issues.

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Partnership: Previous Projects

- Proven track record of working together: AIAs, MRFs, South Fork Sewer Phase II.
  - South Fork Sewer Phase II Project
  - 2017 AIAs Gastonia
  - 2020 MRF Studies
  - TRU is already a valued partner of the Town's

Partnership: Consolidation Discussions

- Both parties support consolidation discussions and have been working towards inevitable consolidation for years.
  - TRU is an extension of McAdenville's staff.
  - By not conveying infrastructure, it is going to be cost-prohibitive to support the systems in the near future.
  - Consolidation would look like this:
    - Ownership/O&M:
    - The Town of McAdenville would transfer ownership of the Town's existing distribution and collection systems to the City of Gastonia/Two Rivers Utilities.
    - The City of Gastonia/Two Rivers Utilities would assume ownership, operation, and maintenance of the McAdenville distribution and collection systems.
    - The impacts to the City/TRU organizationally will be minimal since water and wastewater treatment, operations, and maintenance are already provided to McAdenville by TRU.
    - No new infrastructure is proposed.

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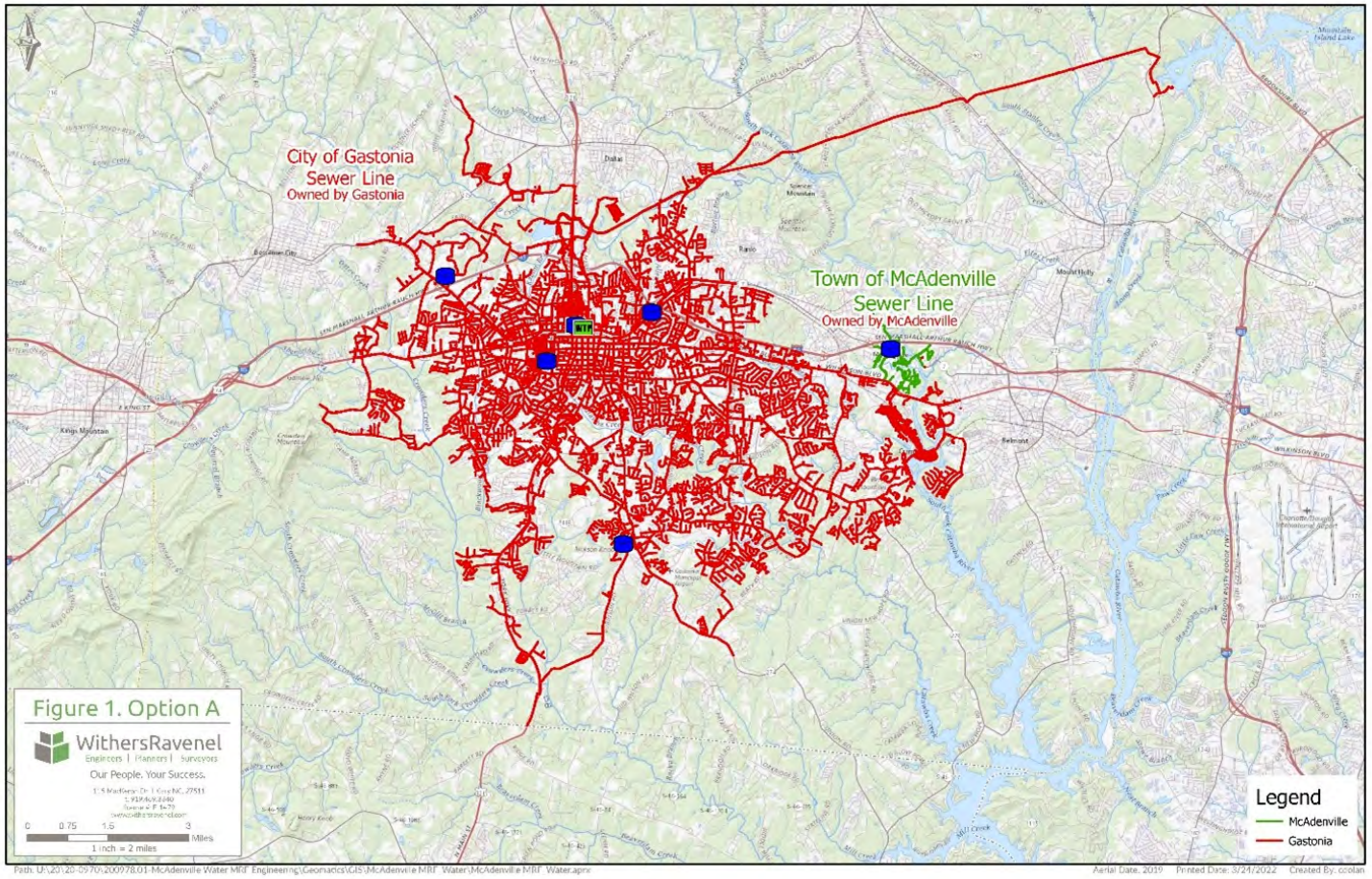
Partnership: Status Quo Map



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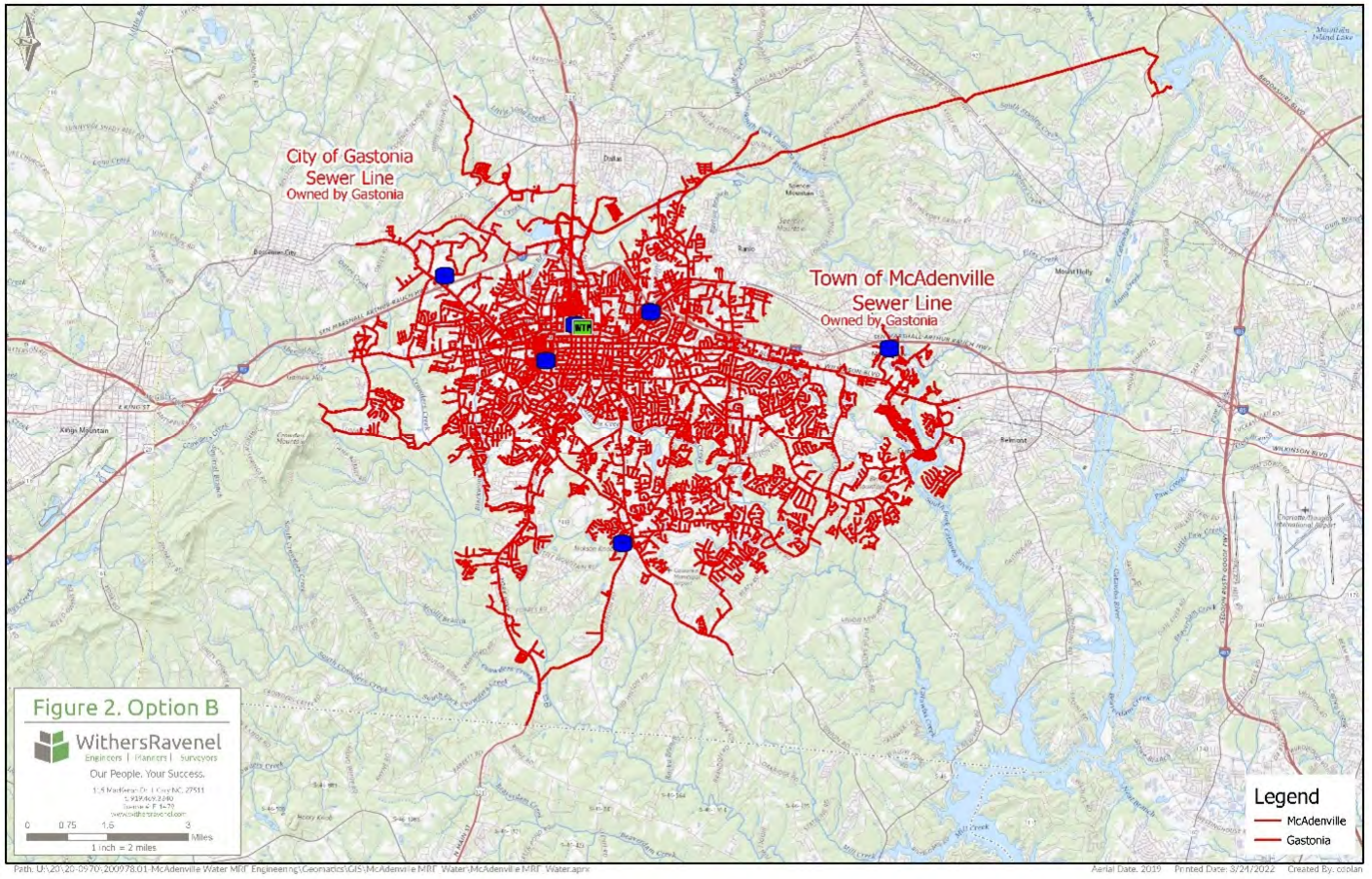
Partnership: Merger Map



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Summary

McAdenville's water & sewer system is not viable in the long term

- Financial Challenges
  - Town cannot charge rates high enough to be self-sustaining
  - The water & sewer fund could be depleted by a single event
  - Town has little opportunity to gain economy of scale due to limited geography
  - Without a merger, McAdevnille will be reliant on grant funds to continue to provide safe drinking water and protect public health
- Managerial Challenges
  - Lack of human resources
  - Limited staff knowledge
  - Challenges in completing infrastructure projects

The Town has a willing merger partner in TRU

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